

*Sacerdote, et al. v. New York University*, 1:16-cv-06284 (KBF) (S.D.N.Y.)

**Joint Pre-Trial Order- Exhibit 15**

**April 5, 2018**

**Declaration of Michael Geist**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF NEW YORK**

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|--|-----------------------------------|
| DR. ALAN SACERDOTE, et al.,<br>Plaintiffs,<br>v.<br>NEW YORK UNIVERSITY,<br>Defendant. | No. 1:16-CV-06284<br><br>ECF Case |
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**Declaration of Michael J. Geist**

I, Michael J. Geist, declare as follows:

1. I am over the age of 18 and competent to testify. I have been retained by Plaintiffs' counsel in this matter to provide expert analysis and opinions related to the fiduciary process and decisions made by New York University ("NYU") and its officers and trustees regarding the recordkeeping and administrative services provided to the New York University Retirement Plan for Members of the Faculty, Professional Research Staff and Administration ("Faculty Plan") and New York University School of Medicine Retirement Plan for Members of the Faculty, Professional Research Staff and Administration ("Medical Plan").

2. I provided my initial expert report on December 22, 2017 and a rebuttal expert report on January 22, 2018. Prior to my deposition, I provided a corrected report on February 6, 2018 and the Defendant took my deposition on February 7 and March 20, 2018.

**I. Qualifications and Experience**

3. I spent over ten years in the Retirement Plan Services ("RPS") division of T. Rowe Price holding a variety of senior level roles. Over the course of my employment at T. Rowe Price, I was responsible for delivering, creating, and/or governing over 20,000 pricing proposals for over 10,000 retirement plans. Since 2005, I have had various roles in which I was directly involved

with pricing proposals for recordkeeping and administrative services provided by RPS to defined contribution plans, including recordkeeping-only clients. I had direct experience with large defined contribution plan clients and prospective clients, including those ranging from \$500 million to well over \$1 billion in total plan assets. In my professional experience at RPS, I developed extensive knowledge of the sales and competitive bidding process for recordkeeping and administrative services provided by RPS and other competitor recordkeeping service providers for large defined contribution plans. I gained a firm understanding and insight into how recordkeepers price recordkeeping services, the costs to provide such services, and how sophisticated recordkeepers respond to Request for Proposals (“RFPs”) to maintain or secure business from large defined contribution plan clients. Over my career, I acquired extensive knowledge of fiduciary best practices for defined contribution plans, including those employed by fiduciaries and industry professionals, to ensure that only reasonable recordkeeping and administrative fees are charged to plan participants.

4. Most recently, I was a Senior Vice President in the Product Development and Management department of RPS from February 2015 until August 2016. I was responsible for the development and management of Recordkeeping Fee services and solutions for RPS. Among other things, I developed and launched the RPS “Fee Allocation Solutions” service which assists plan sponsors in their fiduciary duties to monitor recordkeeping fees and make decisions about the equitable allocation of plan expenses among plan participants. These services utilized database technologies to more precisely account for revenue sharing and recordkeeping credits attributable to the investments selected by plan fiduciaries and made available to plan participants. In that role, I also partnered with the Pricing Governance department to develop enhanced recordkeeping fee pricing solutions for plan sponsors.

5. I spent approximately two and a half years as the National Pricing Governance and Data Strategy Manager for RPS from August 2012 until February 2015. In that capacity I was responsible for, among other things, the financial evaluation and governance of all retirement plan pricing for RPS. This included developing, leading, and governing the bidding and pricing process as well as the pricing negotiation process for both new and existing business. I was also responsible for developing and governing pricing proposals for over 4,000 retirement plans and 8,000 pricing proposals. Additionally, I was responsible for developing and conducting a regular financial evaluation and pricing review for all current clients. Another aspect of my position consisted of developing a pricing model and pricing strategy for non-qualified plan administration and overseeing the implementation of that pricing model as T. Rowe Price transitioned the recordkeeping of its Non-Qualified plan business to a new provider.

6. I was Vice President of Sales Support and Business Development from February 2011 until August 2012. I managed and oversaw multiple departments supporting sales producers including Lead Generation, Product Governance/Underwriting, RFP Response, Internal Sales Support, and the Pricing, Metrics, and Reporting teams. In that role, I was responsible for, among other things, the financial evaluation and governance of all new business retirement plan pricing for RPS which amounted to approximately 2,000 retirement plans and 4,000 pricing proposals. My responsibilities also included developing, leading, and governing the bidding and pricing process for new business, as well as the pricing negotiation process for new business. I was also responsible for the analysis and segmentation of the retirement plan market.

7. From January 2008 until February 2011, I was a Vice President of RPS serving as the National Sales Operations Manager. In that capacity, I was responsible for developing, managing, and governing all aspects of the sales process for RPS, including the bidding and

pricing process and the pricing negotiation process. In addition, I was responsible for, among other things, the financial evaluation and governance of all new business retirement plan pricing for RPS which amounted to over 4,000 retirement plans and 8,000 pricing proposals.

Additionally, I was responsible for market analysis that supported the development of sales and segmentation strategies as well as sales targets. From around September 2009 through February 2011 I also served as the National Small Market Sales Manager. I was also responsible for managing a team of sales producers and supporting their efforts to win new business for recordkeeping and administrative services provided by RPS.

8. From January 2005 through December 2008 I was a Sales Producer responsible for winning new recordkeeping and asset management business for RPS. During that period, I provided recordkeeping proposals for over 400 retirement plans and over 800 pricing proposals.

9. Prior to joining T. Rowe Price, I served as the Director of Marketing for E-centives, a database marketing company. Prior to joining E-centives, I practiced law for five years.

10. I earned my MBA from University of Maryland, Robert H. Smith School of Business and my JD from the University of Baltimore School of Law. While working for T. Rowe Price, I passed the Principal/Supervisory Exam (Series 24 - General Securities Principal Examination), the General Industry/Products Exam (Series 7 - General Securities Representative Examination), and the Maryland State Securities Law Exam (Series 63 - Uniform Securities Agent State Law Examination).

## **II. Summary of Opinions**

- A. The defined contribution plan recordkeeping industry is a competitive marketplace for services that have become standardized across 401(k) plans and 403(b) plans.**
- B. Similarly situated fiduciaries leverage both the number of participants and the asset size of their plans in negotiating with providers to provide recordkeeping and administrative services for competitive pricing.**
- C. The NYU Plans are among the largest defined contribution plans in both the number of participants and amount of combined assets.**
  - i. As such, the NYU fiduciaries have significant leverage to secure competitive pricing and bundles of services that exceed in both quantity and quality, the services provided throughout the Class period by TIAA and Vanguard.**
- D. Without any reasoned process for consideration and justification for disagreement, NYU fiduciaries consistently refused to follow the advice of their investment advisor, Cammack.**
- E. NYU Plan fiduciaries failed to utilize the same processes that are standard in the industry for evaluating, negotiating, and making a decision during the 2009 request for proposal (RFP).**
- F. NYU Plan fiduciaries failed to benchmark the Plans' recordkeeping fees, which is something done routinely by similarly situated defined contribution plan fiduciaries during the several years in between regular RFPs (which occur every three years).**
- G. NYU Plan fiduciaries deferred to TIAA on matters in which TIAA has a direct conflict, something no similarly situated fiduciary would ever do.**
- H. NYU Plan fiduciaries caused the Plans to pay fees for recordkeeping and administrative services that were six to eight times higher than the reasonable, competitive rate for the same services during the Class period.**
- I. The failures by the NYU fiduciaries to do what similarly situated fiduciaries would do caused the Plan to incur losses that exceed \$42 million.**

## **III. The defined contribution plan recordkeeping industry is a competitive marketplace for services that have become standardized across 401(k) plans and 403(b) plans.**

11. Over the past three decades, defined contribution plans, have become the most common employer-sponsored retirement plan. A defined contribution plan allows employees to

make pre-tax elective deferrals through payroll deductions to an individual account under the plan. Among many options, employers may make contributions on behalf of all participants and/or make matching contributions based on the employees' elective deferrals. The employees can direct their contributions only among investment options selected by the fiduciary of the plan or through a brokerage window, if available.

12. The assets of a defined contribution plan are allocated among plan participants by a recordkeeper, who keeps an accounting of participant savings—contributions, disbursements, and investment growth (or decline). Recordkeeping and related administrative services thus are necessary for all defined contribution plans. These services include, but are not limited to, those related to maintaining plan records, tracking participant account balances and investment elections, transaction processing, call center support, participant communications, and trust and custody services. Third party service providers provide these services on behalf of a defined contribution plan. Some recordkeepers provide only recordkeeping and related services and some recordkeepers are subsidiaries of financial services and insurance companies that also market mutual funds and insurance products.

13. When I refer to recordkeeping services (or recordkeeping and administrative services –these terms are used interchangeably), I am including all of the services NYU received from TIAA and Vanguard that relate to the recordkeeping and administrative services provided to the Plans during the Class period. When I refer to recordkeeping services, or recordkeeping and administrative services, or core recordkeeping services in the context of a price for those services, I am referring to the price that a recordkeeper quotes for providing the bundle of requested services when asked by a plan to provide their “revenue requirement” (this term is the preferred term among plan consultants and advisors) for providing services to the plan. It is

common and understood in the industry that the recordkeeping services are provided as a bundle of services and that anything that is not included in the bundle is identified and charged separately. These separate fees are often paid by participants based on their own activity, e.g., loan initiation fees. If any fees are in addition to the bundled fee, they are identified separately. This is the same structure followed by the 408(b)(2) fee disclosures and is validated by reviewing the bids received by the plans as a result of the 2009 and 2016 RFP process and were summarized exactly in that context by Cammack. Those proposals provide a list of included services for a revenue requirement price and then identify any other ad hoc fees separately.

14. Different providers of recordkeeping and administrative services as well as industry research organizations and associations often define segments of the defined contribution plan market differently. In my experience, defined contribution plans are segmented based on both the number of participants with account balances as well as the amount of assets in the plan. A typical segmentation would be as follows:

**Micro:** Under 50 participants (approx. \$0 – \$2 million)  
**Small:** ~50 – 500 participants (approx. \$2 – \$25 million)  
**Mid:** ~500 – 2,000 participants (approx. \$25 – \$125 million)  
**Large:** ~2,000 – 7,500 participants (approx. \$125 – \$500 million)  
**Mega:** ~7,500 – 30,000 (approx. \$500 million – \$2 billion)  
**Giga:** ~30,000+ (above \$2 billion)

15. The market for defined contribution recordkeeping services is highly competitive, especially for plans that are greater than 2,000 participants or \$125 million in assets. As explained in detail below, these plans offer significant economies of scale and provide a valuable opportunity to recordkeepers in the marketplace. There are numerous recordkeepers in the industry that are capable of providing quality recordkeeping and administrative services to Mega and Giga defined contribution plans.



16. It is not difficult to transition even Large, Mega, and Giga plans to new recordkeepers. The conversion costs are typically waived by the recordkeeper. To the extent that conversion costs are actually charged, they are typically borne by the plan sponsor and not charged to plan participants. The transition to the new recordkeeper can occur easily. Recordkeepers that provide services to large defined contribution plans have dedicated personnel, often referred to as conversion teams, who specialize in transitioning defined contribution plans from the old recordkeeper to the new recordkeeping platform. Because all recordkeepers that service large plans routinely engage in plan transitions, they are fully prepared and equipped to make the transition. They also have personnel who assist the plan sponsor during the conversion and perform other necessary administrative tasks to effectuate the change, such as preparing participant communications.

17. Since the mid 2000's, the basic recordkeeping services provided to defined contribution plans have increasingly become viewed as commodity services. While recordkeepers in the defined contribution industry attempt to distinguish themselves based on their claims about the quality of their services, there are virtually no material differences in the core recordkeeping services provided to Mega and Giga defined contribution plans.

18. By the early 2000s fiduciaries of large plans and their consultants have demanded that recordkeeping and administrative services be priced separately from investment management services. They also sought an "open architecture" investment structure, i.e., the ability to include non-proprietary investment options in the retirement plan where the recordkeeper provides recordkeeping and administrative services for both proprietary and non-proprietary investment options.

19. Due to the demand for fee transparency for recordkeeping and administrative services, the fees charged for recordkeeping and administrative services have rapidly declined since the mid-2000s, the fees that recordkeepers were willing to accept for the recordkeeping and administrative services they provided to retirement plans have rapidly declined. This decline began with larger defined contribution plans and has migrated to all market segments.

20. From January 1, 2009 to the present, recordkeeping and administrative fees charged to defined contribution plans have continued to decline. This has occurred primarily due to market competition, ERISA excessive fee litigation, and the fee disclosure regulations under 29 U.S.C. §1108(b)(2) promoting increased fee transparency. In order to remain price competitive in the industry, service providers have invested in additional infrastructure to provide more automation and standardization to many of the recordkeeping services. This has reduced their costs and enabled the recordkeepers to gain efficiencies and reduce their price for recordkeeping services.

**A. Pricing of recordkeeping and administrative services for defined contribution plans**

21. The underlying cost to a recordkeeper of providing the core recordkeeping and administrative services to a defined contribution plan is primarily dependent on the number of participant accounts in the plan rather than the amount of assets in a participant's account.

22. Regardless of the size of the assets invested in a defined contribution plan, or the balance of individual plan participant accounts, the underlying cost of providing the core recordkeeping and administrative services is the same. All else being equal, the incremental cost of recordkeeping a participant's account with a balance of \$500,000 is the same as for a participant whose account balance is \$5,000 with the same investments. In the aggregate, any

differences in investment holdings from one participant compared to another are immaterial from a cost perspective to the recordkeeper.

23. Service providers for large defined contribution plans experience certain efficiencies of scale that lead to a reduction in the per-participant cost as the number of participants increase, because the marginal cost of adding an additional participant to a recordkeeping platform is relatively low. These economies of scale are inherent in all recordkeeping arrangements for defined contribution plans. When the number of participants with an account balance increases in a defined contribution plan, the recordkeeper is able to spread the cost of providing recordkeeping services over a larger participant base, thereby reducing the unit cost of delivering services on a per-participant basis.

24. These economies of scale are achieved because most costs associated with providing recordkeeping services are fixed, and thus, remain if the client leaves. The portion of the marketing, administrative, and overhead expenses at the firm level that are allocated to the recordkeeping business unit do not typically change if the recordkeeper loses a plan or acquires a new plan. Additionally, the recordkeeper invests in the technology infrastructure necessary to provide recordkeeping and transaction services to all clients (e.g., website, call center, and some print services). These costs also do not materially change with the loss or acquisition of a new plan, and do not vary based on the amount of assets in the plan or in an individual's account. When more participants in a plan are on a recordkeeping platform, the recordkeeper allocates its fixed costs over a larger participant base, thereby reducing the per-participant cost. As a result, the incremental (or marginal) cost to add a new participant to a plan is relatively low.

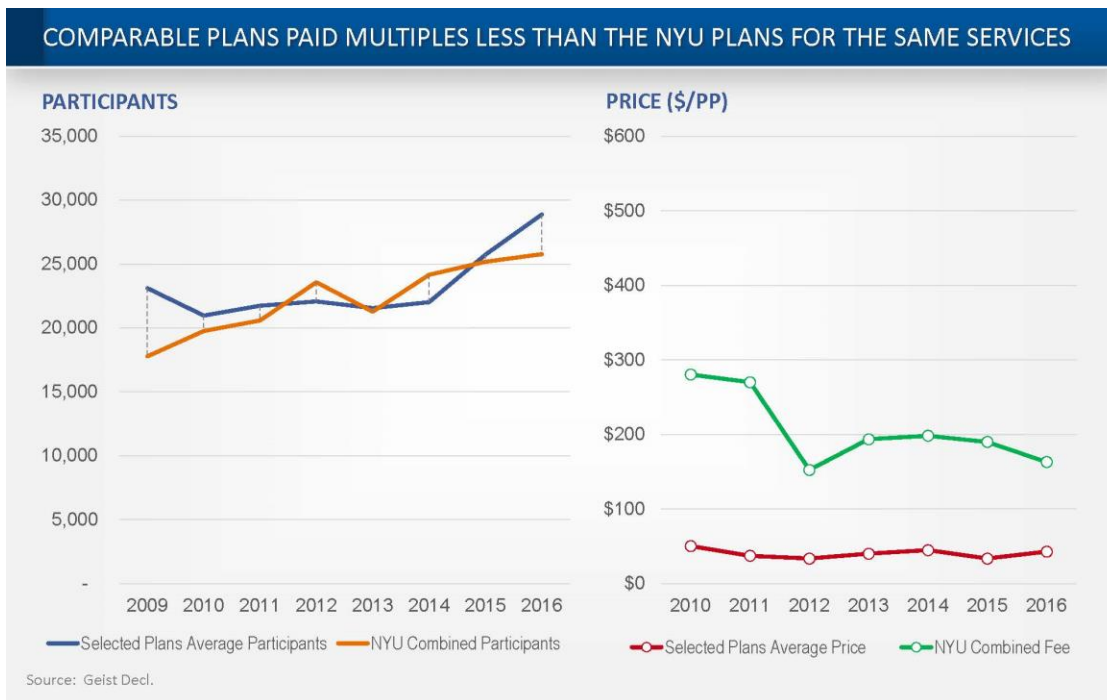
25. The chart below illustrates the basic economics of providing recordkeeping services to defined contribution plans.

| <b>Simple Hypothetical Illustration of the Impact of Scale on the Per-Participant Costs of providing Recordkeeping Services</b> |                         |   |  |
|---|-------------------------|---|--|
|   |                         | Hypothetical fixed costs:                   | \$50,000   |
|   |                         | Hypothetical variable cost per participant: | \$20   |
| <b>Number of Participants</b>   | <b>Total Plan Costs</b> | <b>Average cost per participant</b>         | <b>Percent of Total Plan Costs derived from Variable Costs</b> |
| 1   | \$50,020                | \$50,020.00                                 | 0.04%  |
| 100   | \$52,000                | \$520.00                                    | 3.85%  |
| 1,000   | \$70,000                | \$70.00                                     | 28.57%   |
| 5,000   | \$150,000               | \$30.00                                     | 66.67%   |
| 10,000  | \$250,000               | \$25.00                                     | 80.00%   |
| 50,000  | \$1,050,000             | \$21.00                                     | 95.24%   |
| 100,000   | \$2,050,000             | \$20.50                                     | 97.56%   |

26. As illustrated in the chart above, as the number of participants increase, the average cost per participant decreases until it approaches the marginal cost per participant. And the variable costs account for a larger portion of the total plan cost, which drives down the average cost per participant and enables a recordkeeper to provide the services at a lower price-point. Due to these economies of scale that are part of a recordkeeping relationship, and because the incremental variable costs for providing recordkeeping and administrative services are primarily dependent on the number of participants with account balances in a defined contribution plan, the cost on a per-participant basis declines as the number of plan participants increases.

27. Large defined contribution plans, particularly ones as large as the Faculty and Medical Plans, would have significant bargaining power to obtain lower-cost recordkeeping and administrative services on a per-participant basis compared to smaller plans. For example, based

on my recollection (and confirmation from annual filings with the Department of Labor), there are a number of comparably sized 401(k) and 403(b) plans that I have encountered over the past ten years that paid far less for recordkeeping and administrative services that do not materially differ from the services received by as the NYU Plans.



28. The economies of scale experienced by larger defined contribution plans were described as far back as 1998 in the “Study of 401(k) Plan Fees and Expenses”<sup>1</sup> submitted to the Pension and Welfare Benefits Administration of the Department of Labor and published by the Department of Labor on its website consistently since 1998:

<sup>1</sup> U.S. Dep’t of Labor, *Study of 401(k) Plan Fees and Expenses*, §4.2.2 (Apr. 13, 1998), <https://www.dol.gov/sites/default/files/ebsa/researchers/analysis/retirement/401kRept.pdf>.

**Table IV-4**  
**Average 401(k) Plan Recordkeeping Fees, 1995**  
 By Number of Plan Participants

| <b>Number of Participants</b> | <b>Costs Per Participant</b> |
|-------------------------------|------------------------------|
| <b>200</b>                    | <b>\$42</b>                  |
| <b>500</b>                    | <b>\$37</b>                  |
| <b>1,000</b>                  | <b>\$34</b>                  |

29. Recordkeepers of defined contribution plans typically charge for their services under one of two pricing structures: (1) a per-participant fee based on the number of participants with account balances; or (2) an asset-based fee.

30. Under a per-participant revenue requirement pricing structure, the plan fiduciary and service provider negotiate a fixed per-participant fee based on the number of participants with account balances. In other words, the recordkeeper agrees that it will receive no more than \$X per-participant annually. If the recordkeeper collects more revenue than the agreed-upon per-participant revenue requirement, then the recordkeeper is required to return the excess revenue. This pricing structure has become a standard and customary best practice among plan fiduciaries because the cost of providing recordkeeping services is not dependent on the amount of assets in a retirement plan.

31. After the revenue requirement is negotiated, the plan fiduciary determines how to pay the negotiated recordkeeping fee. The employer (or plan sponsor) can, but is not obligated to, pay the recordkeeping fee itself. If the employer were paying the fee, it would typically want to negotiate a total fee based on the lowest per-participant rate a suitable recordkeeper would accept. An employer can decide to have the Plan pay the recordkeeping fee instead. If the recordkeeping fee is paid by plan participants, the plan fiduciary must determine how to allocate the recordkeeping fee among participant accounts. This is typically done through a flat dollar

amount charged to each plan participant account or pro-rata based on the value of each participant's account.

32. In an asset-based pricing structure, the amount of compensation received by the service provider is based on a percentage of the total assets in the plan.

33. Recordkeepers sometimes make arrangements with mutual fund service providers to share some of the fees that these providers take as expenses from the mutual funds for the recordkeeper to use to apply to recordkeeping costs. These revenue sharing arrangements can occur with the mutual fund's investment adviser, transfer agent, shareholder services provider, or others. Revenue sharing arrangements are typically established in a single agreement between the mutual fund service provider and the recordkeeper for payment of a fixed percentage (for each share class) of the value of all the mutual fund investments in all of the retirement plans for which the recordkeeper provides services. However, as those assets increase, the compensation to the recordkeeper increases, even though its services might not change at all.

34. If a mutual fund has a total expense ratio of 0.75%, the mutual fund company may agree to pay a recordkeeper 0.25% for providing services to the participants who invest in that mutual fund. The revenue paid by the investment option to the recordkeeper, which in this example is 0.25%, is typically referred to as "revenue sharing." The amount of revenue sharing can vary from mutual fund to mutual fund and by share class within a given mutual fund.

35. TIAA-CREF and Vanguard have characterized the revenue made available to pay for recordkeeping and administrative services from proprietary investments, as a plan service expense, a recordkeeping credit, or a recordkeeping and distribution fee.

36. Because the cost of providing recordkeeping services is not dependent on the amount of assets invested in the plan, as assets increase, the recordkeeper's asset-based

compensation paid through revenue sharing likewise increases even though the services provided to the plan, and the cost for providing those services, have not changed.

37. For instance, from 1985 until 2000, the assets in defined contribution plans increased dramatically. As assets grew, the fees collected by recordkeepers increased in proportion to the asset growth, while the services provided by recordkeepers did not materially change in relation to the asset growth. Over time, this often resulted in dramatic increases in recordkeeping fees paid by plan participants.

38. An asset-based revenue sharing arrangement to pay for recordkeeping and administrative services is more common in Micro to Small defined contribution plans. The reason being for those smaller plans the asset-based fee often does not cover the recordkeeping expenses. For Mega and Giga defined contribution plans, due to the economies of scale experienced by recordkeepers, the opposite is true. As a result, fiduciaries for Mega and Giga plans generally negotiate a per-participant revenue requirement and recover excessive revenue sharing for the plan.

**IV. Similarly situated fiduciaries leverage both the number of participants and the asset size of their plans in negotiating with providers to provide recordkeeping and administrative services for competitive pricing.**

39. The Employee Retirement Income Security Act of 1974 (ERISA) sets forth the fiduciary obligations that a fiduciary owes to participants and beneficiaries when administering a defined contribution plan.

40. Under 29 U.S.C. §1104(a)(1), a fiduciary must “discharge his duties with respect to a plan solely in the interest of the participants and beneficiaries.” When performing his duties,



the fiduciary must act “for the exclusive purpose” of “providing benefits to participants and their beneficiaries” and “defraying reasonable expenses of administering the plan.”<sup>2</sup>

41. The fiduciary also must act “with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.”<sup>3</sup> Both of these standards, including the duty to act solely in the interest of plan participants, incurring only reasonable expenses, and acting in conformity with the standards of fiduciaries of Mega- and Giga-size defined contribution plans, are part of what I described here as the actions of a similarly situated fiduciary.

**A. Fiduciary practices for defined contribution recordkeeping fees**

42. Based on my extensive experience in the recordkeeping industry, provided below are best practices a fiduciary would follow when establishing, monitoring and overseeing the recordkeeping and administrative fees charged to a defined contribution plan.

43. Because the total cost of providing recordkeeping and administrative services for Mega and Giga plans is primarily driven by the number of participants with account balances in the defined contribution plan, a fiduciary would negotiate a per-participant revenue requirement (or per-participant revenue threshold) based on the number of participants with account balances. This negotiated per-participant fee would be set forth in a written agreement between the recordkeeper and the plan sponsor or plan fiduciary.

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<sup>2</sup> 29 U.S.C. §1104(a)(1)(A).

<sup>3</sup> 29 U.S.C. §1104(a)(1)(B).

44. A fiduciary is required to fully understand **all** sources of revenue received by a recordkeeper. It must regularly monitor that revenue to ensure that the compensation received by the recordkeeper is and remains reasonable for the services provided.<sup>4</sup>

45. This duty to monitor is critical when recordkeeping services are paid through an asset-based pricing structure. Under this structure, the amount paid for services may dramatically increase based on an increase in plan assets even though the services provided do not materially change. In this circumstance, the recordkeeper's compensation can easily exceed a reasonable fee. A fiduciary would take prompt and corrective action to remedy this overpayment caused by an increase in plan assets to ensure that the recordkeeper only receives reasonable compensation.

46. If the asset-based compensation through revenue sharing exceeds the negotiated per-participant revenue threshold, a fiduciary would require the return or rebate of this excess revenue sharing directly to the plan and/or plan participants.

47. Since before 2008, in my personal experience, if asked by the plan fiduciary, a recordkeeper will allocate excess revenue sharing to a plan account (often referred to as a revenue credit account or ERISA budget) to be allocated back to participant accounts or pay eligible plan expenses. If the excess was not initially returned to the participant accounts, then any amounts remaining after the payment of plan expenses would be credited back to plan participants. The allocation of excess revenue to participant accounts is typically done on a quarterly or annual basis.

48. In most cases, it is a best practice to allocate all revenue sharing back to participants who generated the revenue sharing, and separately deduct the per-participant revenue requirement directly from all participants' accounts. The use of a per-participant revenue

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<sup>4</sup> In the Faculty Plan and the Medical Plan, a source of revenue NYU allowed TIAA to collect is revenue from marketing and selling their proprietary, non-plan related products and services.

requirement pricing structure ensures that the recordkeeper does not receive compensation that exceeds the negotiated fee. In other words, this is one of the primary reasons why a per participant revenue requirement is a best practice because it prevents the plan from paying unreasonable recordkeeping fees when additional contributions are made and if the market appreciates.

49. A fiduciary would engage in a Request for Proposal ("RFP") competitive bidding process to obtain a reasonable recordkeeping fee for a defined contribution plan. This is the surest way to obtain the lowest recordkeeping fee for a desired level of services provided to the plan, and the only reliable way a plan fiduciary can maximize its bargaining power to obtain the best fee available in the marketplace.

50. Under a competitive RFP bidding process, the plan fiduciary, often with the assistance of an independent fiduciary or consultant, sends out a formal request seeking proposals from vendors to provide recordkeeping and administrative services to a defined contribution plan. The request will provide detailed information on the services requested and the characteristics of the plan, and a questionnaire for detailed information about the bidder and the services it will provide and the fees it would charge. Large defined contribution plans that put out RFPs can expect to receive several responses from sophisticated recordkeepers because such large plans are highly valued sources of business for such providers.

51. An effective RFP process is not complete once responses are received from bidders. Rather, the pricing proposals along with the written responses are only the starting point for negotiations. Once the responses are received, a fiduciary begins negotiations with each provider and separately evaluates the recordkeeping fee as well as the total investment management fee (the total expense ratio) and the net investment management fee associated with

each investment option.<sup>5</sup> To do this properly, it is critical to determine the crediting rate that would be made available by each investment option to pay for recordkeeping and administrative services.

52. Regardless of the pricing assumptions underlying each bid, fiduciaries analyze potential plan investment options independent of their decision on the recordkeeping service provider. In conjunction with an appropriate investment selection process, the plan fiduciary should take advantage of any discounts that may be obtained from the recordkeeper based on any proprietary investment options included in the plan. Throughout this process, the plan fiduciary must ensure it is acting solely in the interest of plan participants in both the selection of the recordkeeper and the negotiation of the recordkeeping fee, as well as the selection of the investment options made available to participants in the retirement plan and ensuring both the fees of the selected investment options and the compensation for recordkeeping and related services are reasonable.

53. When evaluating RFP responses and the clarifying responses, the plan fiduciary would compare the services offered and the pricing proposals across vendors. If any further information is necessary to evaluate any material differences in the services offered by each provider, the plan fiduciary would promptly request that information. With the detailed information provided by the bidders, the plan fiduciary can break the pricing proposals down on a per-participant basis to ensure an “apples-to-apples” comparison is made. This process allows the plan fiduciary to gain a detailed understanding of the pricing approaches among various recordkeepers.

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<sup>5</sup> The net investment management fee is derived by subtracting the crediting rate of a particular investment option (or revenue sharing) from the total expense ratio.

54. After evaluating the pricing proposals on an “apples-to-apples” basis, and considering other detailed information provided in the RFP responses, a fiduciary would separately negotiate with each provider. The fiduciary would provide each provider and the incumbent the comparative pricing of their competitors and request that each provider provide pricing reductions to remain under consideration. The plan fiduciary would then narrow the list of providers to a total of three or four finalists, which often would include the incumbent.

55. When nearing a final decision on the recordkeeper, the plan fiduciary requests that each finalist provide its final bid. If the incumbent was not the lowest bid, the plan fiduciary requests that incumbent beat the competitor’s price to remain under consideration. In these situations, the incumbent recordkeeper will conduct a financial analysis comparing the scenario of keeping the business at the lower recordkeeping price or losing the client, which would include the inherent risk of losing any proprietary investments and other supplementary revenue derived from the relationship. In most cases, the incumbent determines that maintaining the client at the lower price is in their economic interest.

56. Due to the competition among candidates, and their motivation to secure the business, the final fee quotes presented to the plan fiduciary are substantially lower than the initial bids. Even the threat of engaging in a RFP process can cause the incumbent to renegotiate its contract to reduce its compensation significantly.

57. A fiduciary should engage in a competitive RFP bidding process every three years.<sup>6</sup> Throughout my professional career, this has been the accepted best practice among fiduciaries and industry professionals. Over a three-year period, enhancements in recordkeeping

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<sup>6</sup> Cammack told NYU in their very first report to the Committee that “[e]ven if the vendor relationships were ideal” NYU should conduct an RFP every 3-5 years to ensure that the Plans service providers are competitive for the market place. PX0096 at CLC0021634. NYU failed to conduct an RFP from 2009 to late 2016. PX0599.

services occur and recordkeeping prices have been trending lower through competitive market pressures, among other factors, which provide the plan fiduciary an opportunity to obtain a lower fee for the desired level of services. There are also some triggering events that significantly change the characteristics and demographics of a plan, however, that warrant engaging in this process earlier.

58. A fiduciary regularly evaluates the reasonableness of the recordkeeping and administrative fees charged to the plan even if no significant changes in the plan have occurred in the intervening three years.

59. In a RFI or benchmarking process, the identity of the plan and plan sponsor may or may not be disclosed, although some minimal plan characteristics (i.e., number of participants, value of the assets, and cashflow) are always included to enable the recordkeepers to provide a pricing bid. The information received from respondents in an RFI is less detailed than what would be provided under a formal RFP process. Although candidates submit informal pricing proposals under a RFI or benchmarking process, these do not result in the lowest fee for the desired level of service. This is because, among other reasons, a formal RFP process sends a clearer message to vendors that the plan fiduciary is actually considering a change in service provider and the recordkeeping and administrative services are open to competitive bidding. In contrast, under a RFI or benchmarking process, a recordkeeper may not provide the most competitive pricing proposal if it determines that the plan fiduciary is not committed to considering a change in providers.

60. Surveys also may not focus on recordkeeping fees, but instead just describe total plan cost or the “all-in” fee. Total plan cost includes recordkeeping fees and investment management fees of plan investment options and may also include other plan expenses, such as

investment advisor or consultant fees, often making the comparison “apples to oranges.” In defined contribution plans that pay for recordkeeping and administrative services through revenue sharing, such as in a bundled arrangement, this total expense would be identified through the weighted average of the total expense ratios of all of the plan’s investment options. This provides practically no information about what those plans are paying for recordkeeping and administrative services or other services. The fees paid for each service provided to a defined contribution plan must be independently evaluated for reasonableness.

61. A fiduciary therefore does not rely on the total plan cost of a defined contribution plan to determine whether the portion paid for recordkeeping and administrative services is reasonable for the services provided. These surveys are less reliable indicators of a reasonable recordkeeping fee than an RFP. For one, they may not include information as to plans that are at the same or similar participant count or asset size as the plan, and may involve the provision of different services than would be provided to the plan. Second, these surveys depend on information provided by an employee at a company who responds to a questionnaire but who may not fully understand the services provided or total recordkeeping costs for the plan.

62. Hewitt Associates (n/k/a AonHewitt) provides investment consulting and recordkeeping and administrative services to retirement plan clients. In October 2008, Hewitt published an article, “Be a Responsible Fiduciary: Ask the Right Questions About 401(k) Plan Fees”, that emphasizes the inherent flaw in relying on the total plan cost to determine the reasonableness of recordkeeping and administrative fees.<sup>7</sup> Hewitt reinforced that the “actual cost of administrative services is more dependent on the number of participants in the plan”, and as such, administrative fees charged through an asset-based fee can increase as plan assets increase

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<sup>7</sup> Hewitt Associates, *Be a Responsible Fiduciary: Ask the Right Questions About 401(k) Plan Fees* (Oct. 2008).

over time.<sup>8</sup> To illustrate the problem of relying on the total plan cost to assess recordkeeping and administrative fees, Hewitt provided the following hypothetical scenario:

To understand the potentially negative impact of a bundled arrangement, consider ABC Company's plan containing \$300 million in assets with 10,000 participants that utilizes a bundled provider of asset management, record keeping, and trustee services. The total fee charged is 75 basis points. This includes a 50-basis point charge for asset management and a 25-basis point charge for administrative and trustee services. At the beginning of the contract, 25 basis points translates to \$75 per participant, or \$750,000 in total fees.

Over a period of three years, plan assets increase to \$600 million through contributions, rollovers, and investment returns. The participant count remains the same, and fees remain at 75 basis points. The asset growth means that the fees for the administration and other non-asset-related costs have now increased to \$150 per participant, or \$1,500,000 in total fees. This means that fees have doubled while no additional work or services have been provided.<sup>9</sup>

63. The *Prudent Practices for Investment Stewards* handbook written by Fiduciary360 defines the Global Fiduciary Standard of Excellence. It was developed from a prior publication (*Prudent Investment Practices*) co-produced by the Foundation for Fiduciary Studies and the American Institute of Certified Public Accountants. This publication is widely used in the industry by plan fiduciaries, investment advisors, and investment managers. According to the handbook published in 2007, a fiduciary must determine “whether the fees are reasonable in light of the services provided.”<sup>10</sup> Fiduciary360 further noted that in bundled arrangements, a fiduciary should determine whether the recordkeeping portion of the all-in fee is reasonable for the services provided compared to an unbundled arrangement:

In the case of an all-inclusive fee (sometimes referred to as a “bundled” or “wrap” fee) investment product, **the Steward should investigate how the various service vendors associated with each component of the all-inclusive fee are compensated to ensure that**

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<sup>8</sup> *Id.* at 3.

<sup>9</sup> *Id.* at 4.

<sup>10</sup> Fiduciary360, *Prudent Practices for Investment Stewards*, Practice 4.4 (2007).



**no one vendor is receiving unreasonable compensation**, and to compare the costs of the same services on an à la carte basis.<sup>11</sup>

64. The prudent practices outlined above are accepted and recognized among plan fiduciaries and industry professionals. These practices have been employed by plan sponsors and their advisors and consultants when administering defined contribution plans throughout my career and well before 2009.

## **V. Factual Background**

### **A. The NYU Plans are among the largest defined contribution plans in both the number of participants and amount of combined assets.**

65. NYU sponsors several defined contribution plans for the benefit of its employees, including the two plans at issue here: New York University Retirement Plan for Members of the Faculty, Professional Research Staff and Administration (“Faculty Plan”) and New York University School of Medicine Retirement Plan for Members of the Faculty, Professional Research Staff and Administration (“Medical Plan”). From 2009 to 2016, both the Faculty Plan and the Medical Plan grew by almost a billion dollars each.<sup>12</sup> Similarly, the number of participants in each Plan grew by 25-55%.<sup>13</sup>

### **B. The Plans’ Fiduciaries**

66. The Faculty Plan is established and maintained under a written plan document titled “New York University Retirement Plan for Members of the Faculty, Professional Research Staff and Administration.”<sup>14</sup> The Faculty Plan document has been amended and restated several times.<sup>15</sup>

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<sup>11</sup> *Id.*, Practice 4.5 (emphasis added).

<sup>12</sup> See Plaintiffs’ stipulation Exs. A and B.

<sup>13</sup> See Plaintiffs’ stipulation Exs. G, and H.

<sup>14</sup> See, e.g., PX1394.

<sup>15</sup> See, e.g., PX1436 and PX1378.

67. The Medical Plan is established and maintained under a written plan document titled “New York University School of Medicine Retirement Plan for Members of the Faculty, Professional Research Staff and Administration.”<sup>16</sup>

68. Section 2.1 of the Faculty Plan document names NYU as the Faculty Plan’s administrator and Section 7.2 of the Faculty Plan document states that NYU, as the Faculty Plan administrator is also a named fiduciary to the Faculty Plan under section 402(a)(1) of ERISA.<sup>17</sup> The same sections of the Medical Plan document name NYU as the Medical Plan’s administrator and as a named fiduciary to the Medical Plan.<sup>18</sup>

69. While the Board of Trustees for both NYU and the School of Medicine passed a resolution to create the Retirement Plan Committee ( the “Committee”) that would make decisions related to both Plans as well as several other NYU-sponsored retirement plans, some amount of discretion was retained by the Board and other officers of NYU.<sup>19</sup> When asked whether NYU delegated all fiduciary responsibility and authority to the Committee, Mark Petti—NYU’s Associate Director of Retirement Plans and Benefits—testified on behalf of NYU that “[w]hen you say ‘retirement plan committee,’ I think NYU. It’s one and the same in my mind.”<sup>20</sup>

70. Neither the minutes nor any of the Committee member’s depositions show any consideration or evaluation of the benefits the recordkeeper received from float and securities lending. In fact, the longtime chair of the Committee is one which does not know what float is; does not know of the DOL rule on float requiring that it be taken into consideration; and has

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<sup>16</sup> See, e.g., PX0974.

<sup>17</sup> PX1394 at NYU0006867, 6892.

<sup>18</sup> PX0974 at CLC0002591, 2621.

<sup>19</sup> PX0533; PX0478; PX0191.

<sup>20</sup> Doc. 164-3 (Deposition of Mark Petti (“Petti Dep.”) at 82:25–83:11).

never even heard of float.<sup>21</sup> She is equally unaware of securities lending.<sup>22</sup> Being oblivious to what they are, she also does not know they produce revenue that can be captured for the benefit of the Plans.<sup>23</sup>

71. The Committee Chair also does not know what fees are in the CREF Stock Account, how many layers of fees there are, or the categories of fees.<sup>24</sup> Neither she nor anyone on the Committee even asked about any of these, though it has been in the plan for decades.<sup>25</sup>

72. Moreover, while the Committee co-chair knows that size matters in obtaining lower fees, after the nine years as chair, she does not know the relative size of the Plans, and was surprised to learn that the NYU Plans are in the largest fraction of 1% of all defined contribution plans.<sup>26</sup>

73. Further, the Committee chair also does not know that for a Large, Mega, and Giga plan, such as NYU's, mutual fund companies will readily waive minimums for lower fees.<sup>27</sup>

#### NYU Multiple Vendor Platform

74. NYU has provided a multiple recordkeeper arrangement for the retirement plans it sponsors.<sup>28</sup> For example, as of 2009, Prudential, TIAA-CREF, and Vanguard each provided recordkeeping services to the Medical Plan.<sup>29</sup> And as of this report, Vanguard and TIAA-CREF each provide recordkeeping services to the Faculty Plan.<sup>30</sup>

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<sup>21</sup> Doc. 164-2 (Deposition of Margaret Meagher ("Meagher Dep.") at 213:10-214:4).

<sup>22</sup> Id. at 213:12-214:17.

<sup>23</sup> Id. at 214:23-218:25.

<sup>24</sup> Id. at 209:14-210:21.

<sup>25</sup> Id. at 209:16-23.

<sup>26</sup> Id. at 142:5-143:16.

<sup>27</sup> Id. at 146:6-17.

<sup>28</sup> Petti Dep. at 84:23-85:5.

<sup>29</sup> Id.

<sup>30</sup> Id. at 85:6-11.

75. The Plans only offer investment products of the Plans' vendors—i.e., TIAA-CREF and Vanguard. More than 70 investment options have been included in each of the Plans for decades in many cases.<sup>31</sup>

### **C. Cammack LaRhette Advisors**

76. In 2008, NYU began working with Cammack LaRhette Advisors, LLP (“Cammack”) as adviser to several defined contribution plans sponsored by NYU, including the Faculty Plan and the Medical Plan.<sup>32</sup>

77. The April 2009 investment advisory agreement between Cammack and NYU detailed the scope of the initial RFP project for which Cammack was engaged, and was subsequently amended effective May 2010 to identify additional “ongoing services” Cammack would provide as a consultant to the Plans.<sup>33</sup>

78. At the May 15, 2009, Committee meeting, Cammack recommended that the committee streamline Plans' investment lineups to avoid confusion and to make it possible to effectively monitor the Plans' funds and consolidate service providers.<sup>34</sup> Cammack specifically recommended that the Committee seek consolidation of the plan's vendors through an RFP given that an “RFP would yield valuable concessions” and “[t]he competition between the vendors would almost certainly result in lower expenses.”<sup>35</sup>

### **D. NYU Plan fiduciaries deferred to TIAA on matters in which TIAA has a direct conflict, something no similarly situated fiduciary would ever do.**

79. For the over 40 years, the Faculty and Medical Plans were subject to ERISA, the Plans' fiduciaries maintained TIAA-CREF (TIAA) as a recordkeeper and investment provider

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<sup>31</sup> Meagher Dep. p. 24:25-26:22, 34:9-17.

<sup>32</sup> PX0972, PX0476, PX0404, PX1323.

<sup>33</sup> PX0404, PX1323; PX0404 at CLC0049958; PX0404 at CLC0049962

<sup>34</sup> PX0473 at NYU0003087–89.

<sup>35</sup> *Id.* at NYU0003089.

without ever issuing an RFP to ensure the prices and services were competitive.<sup>36</sup> During the relevant time here, TIAA's pricing for its recordkeeping and administrative services was multiples more than competitive prices for the same services during the same period of time. Further, TIAA's recordkeeping and administrative services were far inferior to other, comparable recordkeepers. As a result, the participants in the plan paid millions of dollars in unreasonable recordkeeping fees over several years. NYU performed most aspects of its fiduciary duties pertaining to selecting a recordkeeper and ensuring recordkeeping fees were reasonable in a poor, deficient, and manner inconsistent with the practices of a similar situated fiduciary.

80. NYU's corporate representative admitted that TIAA's compensation for providing recordkeeping services to the Plans is and always has been paid by participants through uncapped revenue sharing.<sup>37</sup>

81. The earliest recordkeeping agreement I have reviewed between NYU and TIAA is dated March 10, 2008, and relates to the services TIAA will provide to the Faculty Plan only.<sup>38</sup> NYU's corporate representative testified that he does not recall there being a recordkeeping agreement between TIAA and the Medical Plan as of March 2008, even though the Medical Plan's participants were compensating TIAA for recordkeeping services at that time.<sup>39</sup>

82. The March 2008 contract between TIAA and NYU covering the Faculty Plan states TIAA will be compensated for its recordkeeping services and vaguely describes the method by which TIAA will be compensated for the services provided to the Faculty Plan. Paragraph 8 of the March 2008 contract is titled "Fees" and states, in its entirety:

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<sup>36</sup> PX0626 at NYU0109022-24. *See also* PX0944 at TIAA\_NYU\_00032603, 10, 16.

<sup>37</sup> Petti Dep. 149:25–155:5.

<sup>38</sup> PX0157 at NYU0000244–57.

<sup>39</sup> Petti Dep. at 101:3–103:9.

[NYU] understands and accepts that TIAA may be compensated for its services under this Agreement by payments made by providers of mutual funds, or their affiliates, used as allocation options under the [Faculty Plan] and from fees under the TIAA-CREF annuity contracts. This shall include sharing, on a periodic basis, in the revenue derived by such mutual funds providers and TIAA-CREF.<sup>40</sup>

83. NYU admits it is not possible from the March 2008 contract to determine the amount it agreed to cause the Faculty Plan participants to pay TIAA for recordkeeping services.<sup>41</sup>

84. The earliest recordkeeping agreement I have reviewed between TIAA and NYU covering the Medical Plan is dated October 1, 2012.<sup>42</sup> As with the contract NYU executed with TIAA on behalf of the Faculty Plan in March 2008, the October 2012 recordkeeping agreement between TIAA and NYU regarding services being provided to the Medical Plan vaguely describes the method by which TIAA will be compensated for the services provided to the Medical Plan. Paragraph 8.1 of the October 2012 within a section titled “Fees” states, in its entirety:

The Employer understands and accepts that TIAA may be compensated for its services under this Agreement by payments made by providers of mutual funds, or their affiliates, used as allocation options under the Plans and from fees under the TIAA-CREF annuity contracts. This shall include sharing, on a periodic basis, in the revenue derived by such mutual fund providers and TIAA-CREF, which revenue sharing, if any, is described in Schedule B hereto.<sup>43</sup>

85. Because the October 2012 agreement does not say the amount TIAA will be paid for recordkeeping services, it is not possible from the October 2012 contract to determine the amount NYU agreed to cause the Medical Plan participants to pay TIAA for recordkeeping services.<sup>44</sup>

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<sup>40</sup> PX0157 at NYU0000248.

<sup>41</sup> Petti Dep. 143:18–148:18.

<sup>42</sup> PX0937 at NYU106544-65.

<sup>43</sup> *Id.* at NYU0106548.

<sup>44</sup> *See* Petti Dep. 143:18–148:18.

86. When TIAA finally quoted NYU a “required revenue rate,” the revenue rate was always expressed in basis points instead of a flat rate tied to the number of participants.<sup>45</sup>

87. Neither NYU nor the Committee ever determined the total dollar amount or per-participant fee of TIAA’s required revenue rate to provide recordkeeping services to the Plans.<sup>46</sup>

88. Moreover, the co-chair of the Committee admitted that the Committee takes TIAA’s word for what its costs are and that NYU made no attempt to determine if TIAA’s representations were accurate.<sup>47</sup>

89. The unquestioning acceptance of whatever the recordkeeper said was their cost was done despite the fact that Cammack insisted to NYU that it is necessary “to push TIAA to offer a better price.”<sup>48</sup>

90. The Plans began receiving revenue credits from TIAA in 2013, which were credited back to the Plans’ participants. The amount credited back to the Plans is the amount of revenue sharing paid to TIAA in excess of the “required revenue rate.” The Plans’ fiduciaries never calculated the required revenue rate as a per-participant fee to be compared to other recordkeeping providers. Further, the amounts of the revenue credits were not monitored or negotiated further by the Committee or NYU even though the recordkeeping revenue TIAA received exceeded a reasonable fee.

91. NYU could have converted all the TIAA annuity products to an employer-controlled contract that would have enabled NYU to fulfill its duty to ensure that the participants did not pay unreasonable recordkeeping fees and unreasonable investment management fees. For example, TIAA had frequently worked with Plan Fiduciaries of other plans to convert

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<sup>45</sup> See, e.g., PX0937 at NYU106558; Petti Dep. 157:13–24.

<sup>46</sup> Petti Dep. 204:25-205:6.

<sup>47</sup> Meagher Dep. p. 71:12-72-5.

<sup>48</sup> PX0373 at CLC0039000.

employee-controlled annuities to employer-controlled annuities. If TIAA had done it for other plan fiduciaries, then it could have been done for the Faculty Plan and the Medical Plan.

Accordingly, it is clear that it was possible, but that NYU failed by not requiring it to happen.<sup>49</sup>

92. NYU never inquired with TIAA regarding the purported basis for its position regarding the individual annuities. NYU never sought to stand in the shoes of participants to make changes necessary to comply with ERISA's strict mandates. NYU never pursued other opportunities to accomplish the same goal, including requiring TIAA to work with NYU to contact participants and "convert" "Participant-controlled" contracts to "employer-controlled" contracts.<sup>50</sup> TIAA readily admitted that it had a practice of allowing "employers to direct" "participant-controlled" assets when it was necessary to administer the plan properly.<sup>51</sup> Finally, NYU never established a new contract with TIAA enabling explicit control over Plan assets for those assets even TIAA would agree the employer could move. In other words, there were a myriad of options available to the Plans' fiduciaries, and the fiduciaries did nothing.

93. Furthermore, the plan documents for the Faculty Plan and the NUY Medical Plans specifically state that to the extent that any provision of the plan is inconsistent with the provision of any annuity contract, the provisions of the plan will control.<sup>52</sup> TIAA was aware of the provisions of the plan document. It is not possible for NYU to fulfill its fiduciary duties with respect to plan investments if they do not have the ability to terminate the availability of any investment option and transfer those assets to a different investment option. As a result, NYU could have required TIAA to convert all the annuities to "employer-controlled" assets. Despite

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<sup>49</sup> See, e.g., Doc. 164-34 (Deposition of Douglas ("Chittenden Dep.") at 109:4-127:22.

<sup>50</sup> See PX1116 ("Notes from Committee Meeting of August 2011").

<sup>51</sup> See PX1116; Chittenden Dep. 109:4-122:12.

<sup>52</sup> See PX0944 at TIAA\_NYU\_00032601.



this knowledge, NYU did not require TIAA to convert all the “participant-controlled” assets to “employer-controlled” assets.

94. Apart from this, the annuity contracts incorporated by reference all applicable laws and regulations, which would govern in the event of a conflict.<sup>53</sup> This additional provision provided NYU an opportunity to transfer assets to a group annuity contract that complied with ERISA and the Plan document, in order to avoid a breach of fiduciary duty and prohibited transactions under ERISA.<sup>54</sup>

95. All financial services companies are frequently required to (for regulatory reasons or otherwise) change the terms of their individual contractual arrangements with investors or clients. These firms have extensive experience implementing these types of changes. In most cases the services provider can simply send notices to the client/investor indicating that the terms of the service offering are being changed as of a certain date in the future and that the investor will be required to agree to the changes or the services will be terminated. This is common knowledge and practice in both the financial services industry as well as other industries. One way of doing this would be to convert to a group annuity contract with the same terms.

96. From a fiduciary perspective, if TIAA refused to agree to make these changes, the Plan Sponsor would be obligated to terminate all services with TIAA and work to force TIAA to make the changes. Any other conclusion does not survive scrutiny from the perspective of a Plan Fiduciary. It would require a finding that NYU is responsible for the fees and expenses related to plan assets, yet would have no ability to move the assets if the provider raised its fees to unreasonable levels which would cause NYU to violate its duties. In this case, between 2009

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<sup>53</sup> PX0737 at TIAA\_NYU\_00014779.

<sup>54</sup> See PX0463 at NYU0002389 (noting that NYU must cancel contracts that fail to conform to new regulations in order to prevent a prohibited transaction from occurring).

and 2010, TIAA actually increased its net investment management fee rates as much as 140% with no change in the services provided. If NYU cannot control plan assets, it cannot actually be fiduciaries to those assets.

97. Accordingly, NYU should have required TIAA do exactly what the RFP process set out to achieve, which is to implement a program to convert all the “participant-controlled” assets to “employer-controlled” assets. If TIAA refused, they should have immediately been disqualified from being the recordkeeper going forward. Pursuing this course of action would have given NYU substantially more leverage. The failure to do this by NYU contributed to the result that the participants paid unreasonable recordkeeping fees during the class period

98. There were several other approaches that NYU could have taken with respect to the allegedly illiquid plan assets to enable them to negotiate effectively with TIAA that were used commonly in the industry in the late 2000’s.

99. For example, NYU could have insisted that TIAA cover the surrender charges especially given the recent increase in the investment management revenues of several of tIAA’s investment options noted above. In my experience, in some situations the Plan Sponsor could make a contribution to participants in the amount of the surrender charges.

100. NYU could have told TIAA that if TIAA did not agree to make the participants whole NYU would go to the press and also let all of the TIAA clients in the higher university community know how TIAA was negotiating in bad faith, had raised its investment management fees by millions of dollars, and was holding its assets hostage.

101. It could have also immediately stopped all contributions to any TIAA investment options and told TIAA that it would also communicate to participants that TIAA was charging unfair fees.

102. It could have also threatened to file suit to have a judge determine that TIAA could not prevent the assets from being moved by the Plan Fiduciaries.

103. Given the tremendous amount of revenue the NYU relationship generated, TIAA probably would have decided that it should accommodate NYU through lower recordkeeping fees and also developing a process to transfer the individual annuity assets to a group structure that would give the Plan Fiduciaries the ability to transfer the annuity assets. Had they begun that process in 2009, even in the worst-case ten-year surrender process, by 2018 90% of the assets would not be in individual contracts by now. That would have given the Plan Fiduciaries much more leverage in the 2016 RFP process.

104. Instead, the Plan Fiduciaries put themselves in an even worse negotiating position vis a vis TIAA in the 2016 process than it had in the 2009 RFP since only half the assets were even available to be moved in 2016 (since only the WS plan was part of the RFP 2016 RFP process).

105. Despite the Committee's mistake of not converting the individual annuity assets to employer-controlled assets back in 2009 or before, and knowing from the 2009 experience that TIAA's hold on the annuity assets diminishes the plans' buying power and leverage, NYU allowed TIAA to keep the assets in individual contracts for the 2016 RFP process. It is not even listed as a goal to make the assets employer-controlled in 2016. It is axiomatic that fiduciaries to an ERISA plan have control over the plan's assets in order to fulfill their fiduciary duty under ERISA. Allowing TIAA to hold the Plans' assets hostage is inconsistent with the governing Plan documents for each Plan and inconsistent with the practices of similarly situated fiduciaries.

106. To make matters worse, its response to the 2016 RFP, TIAA claims it would no longer refund excess recordkeeping revenue with respect to any assets that are not converted to a

new provider. PX0009. TIAA took the position that if NYU moved to a different recordkeeper, not only would TIAA prevent the transfer of the vast majority of the Plans' assets, it would also increase the fee for providing recordkeeping services for those assets even though the services required by the Plan from TIAA would dramatically decrease. The NYU Plan fiduciaries accepted this position without question. Similarly situated fiduciaries would not have accepted either of these representations and instead would have moved the Plans' assets to a service provider who worked with the Plans' fiduciaries to keep the Plans compliant with ERISA.

107. Ms. Wagner states that "even if the plan sponsor wanted to map the assets of unapproved 403(b) investments to the plan's investment menu, it would be unable to do so without the participant's consent."<sup>55</sup> This belief is being used to justify Plan Fiduciaries' conduct in allowing a vendor to effectively hold plan assets hostage as if this fact obviates the Plan Sponsors of their fiduciary duties related to plan assets. This rationale is not based in the language of the annuity contracts, the Plan document, or the underlying principles of ERISA.

108. NYU was aware that allowing TIAA to claim certain plan assets were not liquid and could not be mapped greatly limited NYU's "purchasing power."<sup>56</sup> As a result, a significant goal of the 2009 RFP process was to make sure the chosen vendor administered the "program" in a way that enabled NYU to transfer all the assets which would give it more leverage over the incumbent provider. For example, in the March 18, 2010 committee meeting the Committee understood that "a goal of the RFP was to give the [*sic*] NYU control over the assets in the program."<sup>57</sup> In the October 2009 analysis of the RFP responses it was again specifically stated that "the selected vendor will be determined partly on their ability to offer a guaranteed account

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<sup>55</sup> Wagner, paragraph 25.

<sup>56</sup> See, e.g., PX0526 at NYU0028137.

<sup>57</sup> See PX0185 at CLC0023678.

product that will provide control of the plan assets to NYU, and to provide for the movement of the program to a new vendor, if necessary” and that “NYU would gain the critical fiduciary control aspects of the plan related to plan expenses and investments.”<sup>58</sup> Despite this knowledge, NYU did not require that TIAA implement a program that resulted in all plan assets being controlled by the Plan Sponsor.<sup>59</sup>

109. NYU’s failure to challenge TIAA is not new. For the entirety of NYU’s relationship with TIAA, NYU relied on TIAA to determine what was appropriate for the Plan in a complete abrogation of NYU’s fiduciary duty.<sup>60</sup> Similarly situated fiduciaries knowledgeable in this area would never defer to a service provider on critical areas like fiduciary prudence related to fees and investments. The conflict of interest is too large.

#### **E. Vanguard Recordkeeping Contracts**

110. NYU hired Vanguard to be one of the recordkeepers for both the Faculty Plan and the Medical Plan.<sup>61</sup>

111. NYU negotiated and executed separate recordkeeping contracts with Vanguard for the Faculty Plan and the Medical Plan.<sup>62</sup>

112. NYU has the authority to terminate the agreements with Vanguard regarding recordkeeping services for the Faculty Plan and the Medical Plan.<sup>63</sup>

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<sup>58</sup> See PX0526 at NYU0028138-39.

<sup>59</sup> See also PX0476 at NYU0003672.

<sup>60</sup> See PX0522 (committee meeting minutes noting that it was no longer sufficient to rely on the investment company to determine what fund is appropriate for the Plans).

<sup>61</sup> See PX1493 at NYU0099925–51; PX1502.

<sup>62</sup> Petti. Dep. 125:14-126:2.

<sup>63</sup> PX1493 at NYU0099949; PX1502 at NYU0110858.

113. NYU's corporate representative admits that Vanguard's compensation for providing recordkeeping services to the Plans is and always has been paid by participants through uncapped revenue sharing.<sup>64</sup>

114. The earliest recordkeeping agreement I have reviewed is dated January 1, 2008, and relates to the services Vanguard will provide to the Faculty Plan only.<sup>65</sup> NYU's corporate representative testified that he does not recall there being a recordkeeping agreement between Vanguard and the Medical Plan as of January 2008, even though the Medical Plan's participants were compensating Vanguard for recordkeeping services at that time.<sup>66</sup>

115. The January 2008 contract between Vanguard and NYU covering the Faculty Plan states Vanguard will be compensated for its recordkeeping services and vaguely describes the method by which Vanguard will be compensated for the services provided to the Faculty Plan. Paragraph 9.3 of the January 2008 contract is titled "Custodian Fees" and states, in its entirety:

**9.3 Custodian Fees.** The Custodian shall be entitled to reasonable compensation for its services with respect to the maintenance and administration of the Account as set forth in any fee schedule delivered to the Employer. Any change in the Custodian's fees shall be effective upon 30 days written notice to the Employer. The Custodian's fees shall be collected from the assets of the Account unless they are paid directly to the Custodian by the Employer.<sup>67</sup>

116. NYU admits it is not possible from the January 2008 agreement to determine the amount it agreed to cause the Faculty Plan participants to pay Vanguard for recordkeeping services.<sup>68</sup>

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<sup>64</sup> Petti Dep.175:22-176:8.

<sup>65</sup> PX1493 at NYU0099925-51.

<sup>66</sup> Petti Dep. 125:6-13; 129:19-130:3.

<sup>67</sup> PX1493 at NYU0099950.

<sup>68</sup> Petti Dep. at 164:20-165:12.

117. The earliest recordkeeping agreement I have reviewed between Vanguard and NYU covering the Medical Plan is dated May 6, 2009.<sup>69</sup> As with the contract NYU executed with Vanguard on behalf of the Faculty Plan in January 2008, the May 2009 recordkeeping agreement between Vanguard and NYU regarding services being provided to the Medical Plan vaguely describes the method by which Vanguard will be compensated for the services provided to the Medical Plan. Paragraph 9.5 of the May 2009 agreement is titled “Custodian Fees” and states, in its entirety:

**9.5 Custodian Fees.** The Custodian shall be entitled to reasonable compensation for its services with respect to the maintenance and administration of the Account as set forth in any fee schedule delivered to the Employer. Any change in the Custodian's fees shall be effective upon 30 days written notice to the Employer.<sup>70</sup>

118. Because the May 2009 agreement does not state the amount that Vanguard will be paid for recordkeeping services, it is not possible from the May 2009 agreement to determine the amount NYU contracted for the Medical Plan participants to pay Vanguard for recordkeeping services.<sup>71</sup> NYU concedes it is important for recordkeeping agreements to identify the amount of compensation being paid to the recordkeeper and that would be prudent to do so, even though it failed to do so in its agreement with Vanguard for both the Faculty Plan and the Medical Plan.<sup>72</sup>

119. Vanguard has never rebated to the Plans any revenue sharing payments it has received from the Plans’ participants.<sup>73</sup>

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<sup>69</sup> PX1502.

<sup>70</sup> PX1502 at NYU110860

<sup>71</sup> Doc. 164-3 (Petti Dep. at 167:6–170:7).

<sup>72</sup> Doc. 164-3 (Petti Dep. at 169:18–170:7).

<sup>73</sup> Doc. 164-3 (Petti Dep. at 177:17-21).

**F. The NYU Plan Fiduciaries use of an asset-based fee structure in this case was not consistent with industry practice.**

120. Ms. Wagner spends a lot of time noting that asset-based fee structures are “typical” and in fact implies that there are some advantages to them. While asset-based fee structures are not per-se imprudent, there are no facts that NYU undertook the appropriate analysis of trade-offs necessary to choose an asset-based fee structure or that they are typical of such mega plans. Additionally, Ms. Wagner’s support for NYU’s decisions in these two plans is misplaced.

121. Even if it were “common” or “typical” for a plan sponsor of a 403(b) plan to use an asset-based arrangement for recordkeeping services, that alone does not make it appropriate. Under this type of an arrangement, a plan sponsor must be extremely diligent in monitoring the fees paid to the recordkeeper because assets in a defined contribution plan are almost always increasing with contributions and investment gains. When the asset-based fees exceed a reasonable rate, which they will inevitably, fiduciaries must negotiate with the recordkeeper for a reduction and/or rebate. As Ms. Hollnsteiner admitted, asset based fee arrangements benefit the recordkeeper, allowing it to increase revenues without increasing costs.<sup>74</sup> Most importantly, the plan fiduciary must be willing to leave a recordkeeper who refuses to readjust fees to reasonable levels. I have seen nothing that indicates NYU exercised this level of diligence; instead, I have seen indications that NYU is unwilling to take on this fiduciary task.<sup>75</sup>

122. Contrary to Ms. Wagner’s implied assertion, a per participant recordkeeping fee structure does not require that lower account balance participants would pay a higher proportional fee than higher account balance participants. Wagner paras. 45-49. Specifically,

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<sup>74</sup> Hollnsteiner Depo. 229:11-17.

<sup>75</sup> Doc. 164-3 (Petti Dep. at 185:20-187:2; 179:25-180:24; 193:2-9; 263:3-264:7); Doc. 164-2 (Meagher Dep. at 207:3-9; 135:8-15).



Ms. Wagner makes a common error that assumes if a Plan Sponsor chooses an “asset-based arrangement” with a recordkeeper then that requires that the recordkeeping fees must be allocated in the same manner to the participants. See Wagner paras. 45-49. In fact, Ms. Wagner’s analysis fails to distinguish several separate and independent fiduciary decisions. NYU must separately: 1) negotiate a fee arrangement with a recordkeeper that results in paying only reasonable fees for recordkeeping services; 2) determine who will pay the recordkeeping fees (the plan sponsor can choose to pay the fees on behalf of the participants or choose that the plan participants will pay the fees); and 3) if the fees are to be paid by the participants, then NYU must make a separate and distinct fiduciary decision regarding how to allocate the recordkeeping fees to participants. The decision on how to allocate plan expenses to participants is a fiduciary decision that must be reasoned and documented. I have seen nothing that indicates NYU underwent this critical fiduciary process of not only evaluating the fees paid by the Plans but also the method for allocating the fees amongst participants. While at T. Rowe Price, I specifically worked on fee-levelling solutions for fiduciaries.

123. Contrary to Ms. Wagner’s implicit assertion, there is no requirement that a Plan Sponsor must allocate recordkeeping fees to participants using the same pricing structure negotiated with the recordkeeper. For example, if a plan had 100 participants and the recordkeeping fee was \$40 per participant, then the total amount earned by the recordkeeper would be \$4,000. There is nothing that prevents the Plan Sponsor from allocating that \$4,000 to the 100 participants in different ways, e.g., per capita or pro rata. So, for example, if the plan had \$10,000,000 in assets, then the \$4,000 due to the recordkeeper would work out to 4 basis points (0.04%). Accordingly, if the plan fiduciary decided that it was preferable to allocate recordkeeping fees to each participant on a pro-rata basis, each participant could be charged 4

basis points (.04%). Based on my experience in the industry, most recordkeepers could provide these different fee allocation solutions to their plan sponsor clients during the class period. *See also* PX0899 at Vanguard-NYU\_000368. This refutes Ms. Wagner's claim that an asset-based recordkeeping fee structure requires that higher paid employees would be subsidized by lower paid employees. *See* Wagner para. 45. NYU, in this case, never separately evaluated any of these fiduciary decision; instead, the Plans' fiduciaries blindly allowed the participants to pay millions of dollars a year to TIAA.

124. Additionally, while a plan fiduciary may choose an asset-based fee rate structure with a recordkeeper, the actual fees are paid in dollars, not rates. Accordingly, to properly evaluate recordkeeping fees it is always necessary to convert rates to dollars paid and review the recordkeeping fees in the context of the average fee per participant since the services are provided to individual participants who pay actual dollars to receive the services. In this case, despite receiving initial bids from competitors that worked out to \$80 per participant or lower, NYU never investigated or evaluated those bids properly or provided any justification for why they would choose an asset-based fee rate that would and did result in the plan participants paying much higher fees than other alternatives, such as a flat fee based on the number of participants in the Plans.

**G. NYU Plan fiduciaries failed to benchmark the Plans' recordkeeping fees, which is something done routinely by similarly situated defined contribution plan fiduciaries during the several years in between regular RFPs (which occur every three years)**

125. NYU testified that Cammack conducted benchmarking of the Plans' recordkeeping fees. Petti Dep. at 73:19–75:6. However, NYU cannot identify how often, if ever, Cammack provided it or the Committee with information sufficient to benchmark the Plans' recordkeeping fees. Petti Dep. at 76:5–23. NYU does not recall the name of the document, if

any, that contained the information sufficient to benchmark the Plans' recordkeeping fees that Cammack supposedly provided to the Committee. Petti Dep. at 76:24–77:12. NYU does not recall the type of information, if any, that Cammack provided NYU or the Committee to benchmark the Plans' recordkeeping fees. 77:13–18.

126. No attempt was made by NYU to determine either recordkeepers fees on a flat basis or to obtain the amount of their costs. Meagher Dep. p. 135:16–137:7.

127. Ms. Wagner states in paragraph 38 that the “Committee regularly monitored the fees being charged to the Plans for recordkeeping services and discussed how these costs compared to fees charged by competitors” but provides no citation. In fact, once the Committee completed the 2009 RFP process the Committee rarely mentioned recordkeeping fees and did not monitor the recordkeeping fees as part of any standard or regular process.

128. The regular reports used by the Committee to fulfill its duties generally followed the same format and were focused primarily on the investment analysis.<sup>76</sup> The standard reports do not provide any information about recordkeeping fees, revenue sharing rates or the net investment management fees for each of the investments. They also do not provide specific information about how many participants are in either the Faculty Plan or the Medical Plan. Thus, the reports provide no information about the total dollar amount the Faculty Plan was paying for recordkeeping fees nor the average fee paid by participants in that plan. Likewise, the standard report does not provide any information about the total dollar amount the Medical Plan was paying for recordkeeping fees nor the average fee paid by participants in that plan.

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<sup>76</sup> See all the CLC reports. PX0034, PX0036, PX0043, PX0044, PX0047, PX0096, PX0388, PX0499, PX0507, PX0508, PX0530, PX0531, PX0544, PX0548, PX0603, PX0616, PX0617, PX0618, PX1044, PX1072, PX1073, PX0192, PX0193, PX1104, PX1107, PX1143, PX1144, PX1174, PX1190, PX1201, PX1212, PX1218, PX1227, PX1233, PX1246, PX1253, PX1278, PX1324, PX1340, PX1348, PX1361.

Additionally, the standard reports aggregate information from smaller plans with each of the plans at issue. As a result, merely looking at these reports would not enable the plan fiduciaries to determine the average amount paid by participants in the plan since there would be no way to know how many participants were receiving the services. Likewise, all the Fee disclosure documents provided by TIAA to the Plan do not provide any information on the number of participants who received the services during the disclosure time-period.<sup>77</sup>

129. Moreover, the Committee did not understand its duties to ensure that recordkeeping fees were reasonable. For example, in the August 15, 2011, committee meeting, NYU reviewed a presentation of “the fiduciary process and responsibilities of Committee members.” PX0371. While the presentation makes a cursory mention of reasonable plan expenses, the slide titled “Fiduciary Responsibility and Process: Action Items” does not list anything about monitoring recordkeeping fees much less conducting an appropriate analysis to make sure that they are reasonable. PX1108 at CLC0027629.

130. So, as noted above, while NYU may have written in some meeting notes that it understood its duties related to recordkeeping fees, it is clear from its actions that they did not. Accordingly, NYU did not regularly monitor the recordkeeping fees and neglected its duty to make sure that each of the individual plans was not paying unreasonable recordkeeping fees.

131. NYU wholly failed to investigate, ask about, evaluate, or take into account the benefit that TIAA received from float and securities lending.<sup>78</sup> The DOL requires, for example,

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<sup>77</sup> PX0672, PX0676, PX0680, PX0684, PX0688, PX0692, PX0696, PX0700, PX0704, PX0709, PX0713, PX0718, PX0747, PX0751, PX0755, PX0759, PX0964, PX0968.

<sup>78</sup> TIAA received over \$62 thousand through float income alone. PX0761, PX0753, PX0749, PX0674, PX0678, PX0682, PX0686, PX0690, PX0969, PX0757, PX0694, PX0698, PX0702, PX0707, PX0712, PX0716, PX0721, PX0967. *See also* PX0743 (TIAA\_NYU\_00015341)(describing how JP Morgan captures float on TIAA’s behalf and then allows TIAA to use the float credits to pay expenses incurred by TIAA).

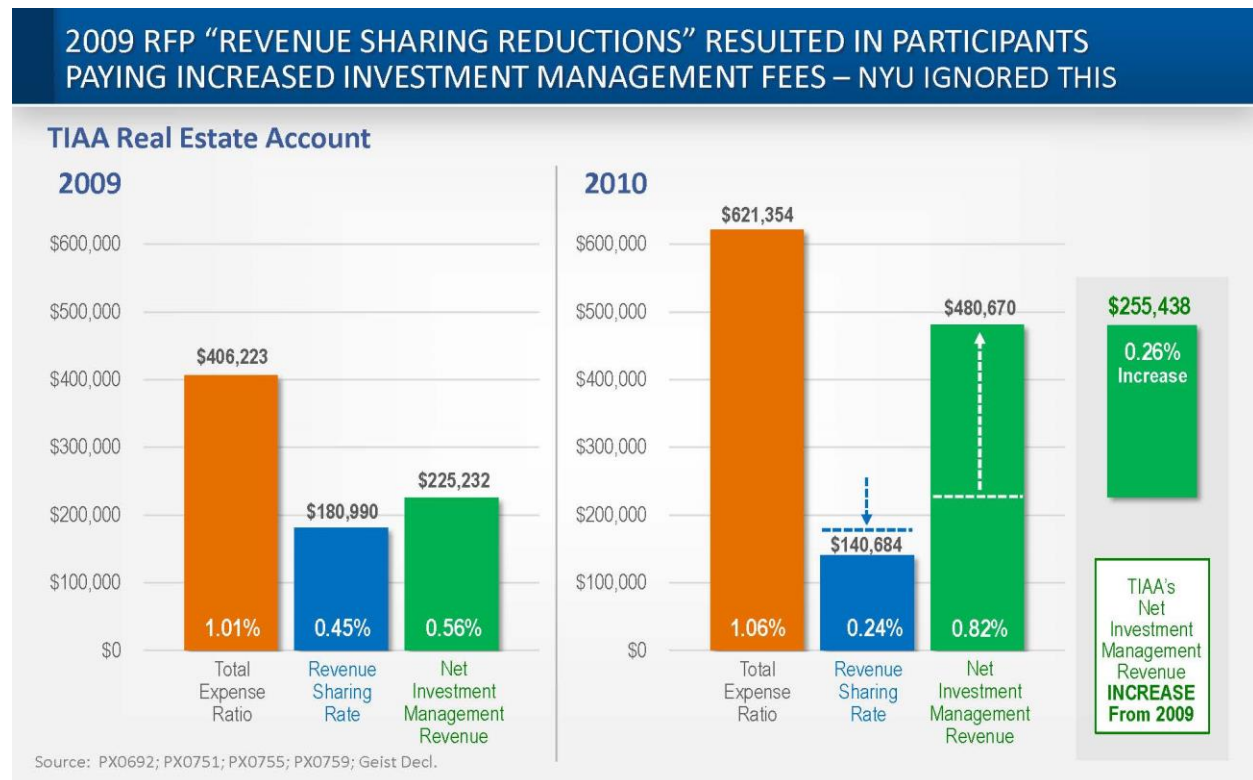
that float be taken into account in pricing services. See

[https://www.dol.gov/agencies/ebsa/employers-and-advisers/guidance/field-assistance-](https://www.dol.gov/agencies/ebsa/employers-and-advisers/guidance/field-assistance-bulletins/2002-03)

bulletins/2002-03. In fact, in a telling admission of the complete absence of engagement, the

Committee's Co-Chair Ms. Meagher, admitted she did not understand the concepts of float and securities lending. Meagher Dep. at 213:1–214:4.

132. Sometime between the end of 2009 and the end of 2010 TIAA changed the total expense ratio and revenue sharing rates on some of its investment options. In some cases, the changes effectively increased the net investment management revenue by 140%. For example, the chart below shows the changes in the expenses for the Real Estate Account from 2009 to 2010.



133. These changes effectively transferred revenue from one division of the TIAA organization to another division and were likely done to make TIAA's recordkeeping fee look

lower. Regardless of the reason behind the changes, these changes effectively increased the fees the plan participants had to pay for TIAA investment management services while the investment management services provided to the participants remained the same and assets were increasing. As this was happening during the RFP process, NYU should have investigated this further. Allowing TIAA to make this change without it triggering a review of all their investment options had the result of making plan participants pay over \$37 million in increased investment management fees (not compounded) from 2009 through 2017. Cammack advised the Committee to consolidate the Plans' vendors.

134. Starting in June of 2008, Cammack regularly expressed to the Committee the advantages of consolidating the Plans to a single recordkeeper including "lower plan costs," among many others.<sup>79</sup>

135. For example, in Cammack's first June 2008 presentation to NYU he stated, among other things, the following:

- a. "One goal of any employee benefits program should be to leverage the purchasing power of the institution so that the employee can obtain a benefit that is more cost effective than he/she could obtain on his/her own. The division of purchasing power among several vendors has a negative impact on pricing and plan features."
- b. "How to consolidate:

136. Request for Proposal (RFP) — best approach for optimum pricing and services from an investment provider (or providers, if a single vendor is not practical)"

137. In May 2010, Cammack created a supplemental presentation for the Committee that included slides dedicated to the advantages of vendor consolidation.<sup>80</sup>

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<sup>79</sup> See, e.g., NYU96380.

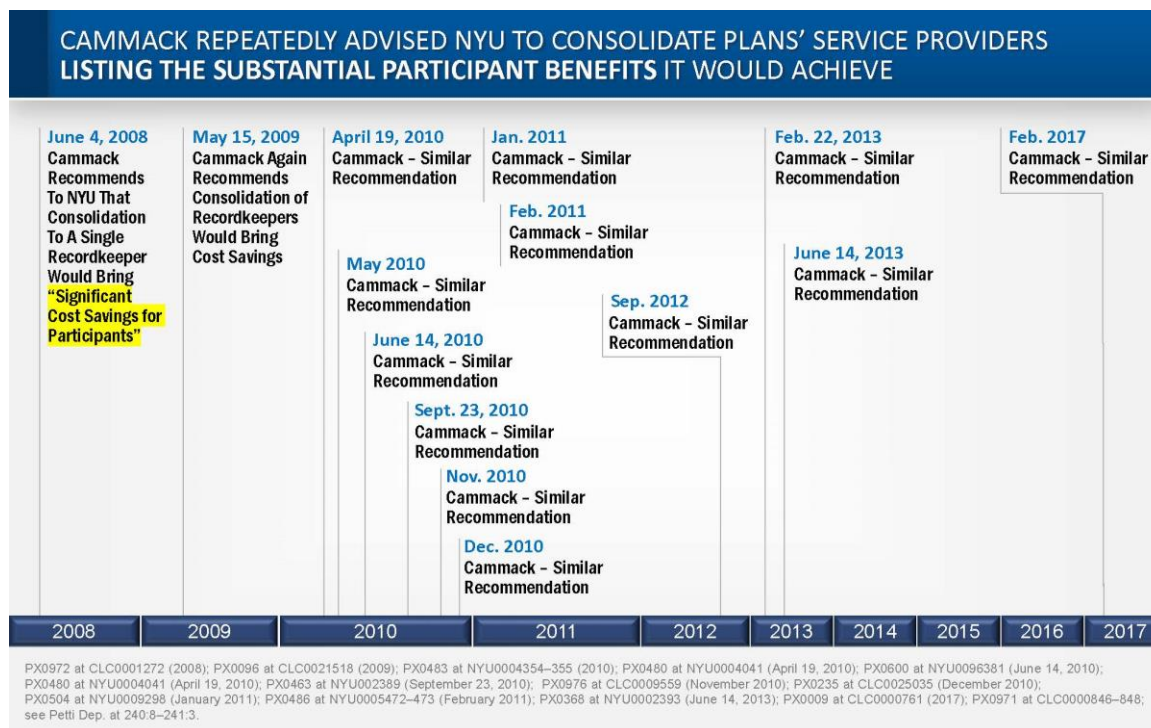
<sup>80</sup> NYU98647–67.

### Advantages of Consolidating the 403(b) Program into a Single Vendor Arrangement

- **Increased purchasing power brings lower cost investments and expanded services** (consolidating assets with one vendor allows use of collective purchasing power to obtain more competitively priced program and broader array of services for participants)
- **Improved appreciation of benefits package by employees** (consolidation allows for better participant communication and education, as multiple-vendor 403(b) programs are most often “sold” by product providers, rather than “bought” by participants)
- **Today’s “open architecture” programs eliminate the need to use multiple vendors** (open architecture platform allows the vendor to offer not only its own investment products, but also the investment products of many other organizations)
- **Eases the overall administrative burden of the program** (full transactional outsourcing - e.g. loans, withdrawals, etc. - is only available if a single vendor is used)
- **Simplifies & reduces DOL compliance costs** (plan sponsor is responsible for coordination of loans, hardships, etc. across ALL vendors; new 5500 filing and audit requirements; written plan documents, etc.)
- **Enhanced NYU control of plan assets** (eliminating or consolidating contracts with assets not under the control of plan sponsor maximizes the negotiation ability of the program in the future)
- **Fiduciary monitoring process is significantly more efficient** (reduced number of funds, ease of collecting information, ability to focus investment reviews and asset categories, etc. all serve to reduce the time and expense required to meet the fiduciary standards)

138. Cammack repeated this recommendation repeatedly over a ten year period.





**H. Without any reasoned process for consideration and justification for disagreement, NYU fiduciaries consistently refused to follow the advice of their investment advisor, Cammack.**

139. On March 18, 2010, the Committee unanimously recommended both Plans move to a sole recordkeeping arrangement with TIAA. The Committee determined that the next step was “to communicate to senior level leadership at NYU and NYU Langone to [e]nsure the support needed for the change[.]”<sup>81</sup>

140. Despite this vote and the passage of almost 8 years, NYU never consolidated the recordkeepers for the Faculty Plan. The Medical Plan finally was consolidated to a single recordkeeper, TIAA, effective March 25, 2013, three years after the Committee’s recommendation.<sup>82</sup>

<sup>81</sup> PX0185.

<sup>82</sup> PX0372.



141. No reasonable explanation is in the Committee minutes or materials or has been given by any deponent as to why it took until 2013 to consolidate the Medical Plan and why the Faculty Plan was not also consolidated.<sup>83</sup>

142. In fact, after consolidation, the Medical Plan consolidation has worked well. Meagher Dep. p. 134.

**I. TIAA's and Vanguard's recordkeeping revenue derived through its relationship to the plans**

143. TIAA, unlike Vanguard, has numerous supplementary lines of business that were and are marketed to NYU Plan participants. Vanguard does not market other products outside the Plans. Meagher Dep. p. 186. TIAA was given unfettered access to market and sell its products and services outside the Plans to participants and to do so with no competition from other providers. TIAA knows each participant's account balance, gender, age, deferral rate, among many other things. TIAA benefited from knowing this information about potential customers. and being able to market to potential customers who are already familiar with the company's brand. In fact, many companies pay for marketing lists of potential customers with demographic information. The more segmented and precise the requirements, the higher the cost to purchase the list. Similar to the purchase of targeted lists of potential customers, there is a value to being able to advertise and communicate to a targeted audience. Firms like TIAA pay to advertise to different audiences through, e.g., television, radio, magazines, etc. As noted above, the more targeted the audience is likely to be, the higher the cost. In contrast, however, TIAA did not pay to advertise and sell to Plan participants. Instead, TIAA actually charges the participants for the unchecked ability to market, advertise, and sell other products to plan participants.

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<sup>83</sup> Margaret Meagher described a change in the University payroll system and IT issues. However, she never could answer why these could have taken years, much less eight years, or how the Medical Plan did it in 2013.

**J. NYU Plan fiduciaries failed to utilize the same processes that are standard in the industry for evaluating, negotiating, and making a decision during the 2009 request for proposal (RFP).**

144. In 2009, the Plans issued an RFP that was submitted to eight recordkeeping vendors to provide services to seven defined contribution plans sponsored by NYU.<sup>84</sup> These plans had over 13,000 combined participants and contained the following assets:

| <b>Provider</b> | <b>Est. Plan Assets (\$M)<br/>As of 1/1/09</b> |
|-----------------|--|
| TIAA-CREF       | \$2,405  |
| Vanguard        | \$637  |
| Prudential      | \$41   |
| AIG VALIC       | \$3  |
| Total           | \$3,086  |

145. Five vendors responded to the 2009 RFP and provided NYU opening bids.<sup>85</sup> All vendors were asked to assume a tentative timeline of:

| <b>Task</b>                          | <b>Date</b>        |
|--------------------------------------|--------------------|
| RFP delivered to potential Vendors   | September 4, 2009  |
| Responses due from potential Vendors | September 25, 2009 |
| Selection of Finalists               | October 30, 2009   |
| Finalists' Presentations             | November 9, 2009   |
| Selection of Vendor                  | November 16, 2009  |
| Commence Implementation of Services  | November 23, 2009  |

146. The Committee met on October 28, 2009 to consider the responses and two finalists were chosen: TIAA and Fidelity.<sup>86</sup> TIAA and Fidelity presented to the Committee a month later than tentatively scheduled, on December 16, 2009.<sup>87</sup>

147. The RFP process was tainted by the secret, behind the scenes involvement of the co-chair of the Committee with TIAA. It is clear that Ms. Meagher's actions demonstrate an attempt to give TIAA the contract:

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<sup>84</sup> PX0128.

<sup>85</sup> PX0526.

<sup>86</sup> PX0846; PX0143.

<sup>87</sup> PX0846; PX0143; PX1545.

- She met secretly with TIAA for lunches and dinners which TIAA paid for to discuss the RFP process. Meagher Dep. p. 89:13.
- She hid the fact of these meetings occurring from Committee members. Meagher Dep. p. 73, 103:18–19.
- She told TIAA that she did not want to “lose ground” with them, yet refused to explain what she meant by that. Meagher Dep. p. 114:17.
- She provided intelligence on Committee members’ leanings on the RFP, describing one as a “wild card.” Meagher Dep. p. 97:11
- She requested that the RFP pricing be given to her first before any Committee member. Meagher Dep. p. 121:21–24
- She has no recollection of telling committee members that she was communicating directly with TIAA outside of Committee meetings. Meagher Dep. p. 124:22
- She initially denied in her deposition meeting with TIAA outside the Committee meetings and only admitted that she did when confronted with emails. Meagher Dep. p. 79:2-11.

148. In addition, another Committee member, Nancy Sanchez, is on TIAA’s Advisory Council. PX0995.

149. Even a cursory analysis of the pricing comparisons used by the NYU Plan Fiduciaries reveals a woeful lack of understanding of how to compare proposals, calculate the actual impact of the proposals on participants, and make appropriate fiduciary decisions based on the proposals. In fact, the NYU Plan Fiduciaries did not effectively follow the process set forth by Ms. Wagner. As Ms. Wagner points out, decisions regarding service providers must evaluate (1) the qualifications of the serviced provider; (2) the quality of the services; (3) and the reasonableness of the fees in light of the services provider. In fact, Ms. Wagner states that “[i]n order to evaluate the reasonableness of the fees quoted by the prospective service provider, *plan fiduciaries should ensure that they understand the provider’s total fees, including both direct... and any indirect compensation remove because its paraphrased – not within the flowing from investments.*” See Expert Report of Marcia S. Wagner, Esq. (“the “Wagner Report”) at 21, para. 70, emphasis added. The Committee never considered all the fees flowing from plan investments. See, e.g., the Overview of Vendor Responses presented to NYU at the October 28,

2009 meeting. (PX0526). Among several deficiencies, the analysis did not allow for an apples-to-apples comparison and in its deficient presentation of the dollar amount of recordkeeping fees that would be earned by recordkeepers understated TIAA's recordkeeping revenues by several million dollars. It also did not illustrate the other revenue that would be earned by the recordkeepers from the investments.

150. Ms. Wagner also states that to evaluate the reasonableness of service providers' fees, Plan Fiduciaries may seek "competitive pricing information which may include bids or quotes from other comparable firms to help determine the prevailing rates for similar services." See Wagner para. 70. In this case it is not disputed that NYU did NOT receive bids from competitors for the same services provided by TIAA. Rather, NYU compared a bid from TIAA that was for providing recordkeeping services to two plans encompassing approximately 18,000 participants and around \$2.8 Billion in assets to bids from comparable firms for providing services to roughly one quarter of the assets and fewer participants. It was known in the industry during the entire class period that, all else being equal, plans with more participants and greater assets can negotiate lower fees than plans with fewer participants and fewer assets. PX0012, PX0013, PX0972, PX0973, PX0880, PX0851.

151. NYU's flawed framework for analysis rendered any conclusions made by NYU about the recordkeeping fees flawed, wrong, insufficient, not up to the requirements for a plan fiduciary.

152. NYU did not evaluate the costs of recordkeeping and the costs of the investments for each plan independently. While NYU is the plan fiduciary for both the Faculty Plan as well as the Medical Plan, NYU's fiduciary duties are not to an aggregation of the participants in both the Faculty Plan and the Medical Plan, as well as numerous other plans. Rather, NYU as

fiduciary to the Faculty Plan owes a duty solely to the participants in the Faculty Plan and the Medical Plan. Accordingly, the analysis of recordkeeping fees, investment management fees, and the net investment management fees should have been conducted at the individual plan level. Any consolidated analysis should only be done in the context of giving the Plan Sponsors of both plans additional buying and negotiating leverage to the extent that the Plan Sponsors for each plan could potentially choose, individually, the same recordkeeper. In fact, NYU never requested an individual price for either of the two 403(b) plans at issue in this case, the Faculty Plan and the Medical Plan. Rather, NYU requested a price for an aggregation of six plans or for a subset of three plans. The four other plans that were included in the aggregated pricing were much smaller than the two plans at issue. As a result, through NYU's flawed process, the buying power of the Faculty Plan and the Medical Plan were leveraged to generate a benefit, i.e., a lower price, for the other four plans. That is a prima facie breach of NYU's duties to the participants in the Faculty Plan and the Medical Plan.

153. Additionally, the Faculty Plan had more participants and more assets than the Medical Plan yet NYU never requested separate prices for the Faculty Plan and the Medical Plan. And, all else being equal, if both plans move to the same provider both plans would get a lower price due to the increased buying power of the single client. That said, to only request one price to be applied to both plans is effectively leveraging the buying power of the Faculty Plan for the benefit of the Medical Plan. This is also a prima facie breach of the duties of the Faculty Plan Fiduciaries.

154. NYU failed to evaluate the two plans individually and failed to obtain the appropriate underlying information about the participants in each plan individually. The lack of

complete plan-level information in this case in and of itself shows that NYU did not gather the minimal information necessary to enable it to perform its duties properly.

155. While NYU improperly evaluated aggregated plan information and did not obtain sufficient individual plan-level information, a basic review of the information that was available should have made clear that the TIAA proposal was not competitive in the market.

Unfortunately, however, the Vendor fee comparison evaluated by NYU during its October 28, 2009 meeting was misleading and not meaningful. PX0526 at NYU0028153.

156. The chart below provides a snapshot view of the Faculty Plan demographics as of year-end 2009, which would have been very similar to what NYU should have evaluated in October of 2009 as part of its analysis of the RFP responses. As is demonstrated in the chart below, TIAA's fee for recordkeeping services is approximately \$4,809,435 or \$435 per participant (TIAA initially only proposed a lower fee for the new assets that would come from Vanguard but maintained its high fee on all the assets that were already on the TIAA recordkeeping platform). Fidelity, on the other hand, proposed an \$80 per participant fee for a plan with scenario with fewer participants and assets. Fidelity's \$80 per participant proposal would have worked out to be around \$885,120 if applied to the same assets and participants that TIAA stood to gain on its recordkeeping platform. That is less than one fifth the cost of TIAA's proposal. Similarly, applying the Vanguard proposal on fewer participants and lower assets to the participants and assets that were assumed in TIAA's proposal reveals that Vanguard's bid was much lower than TIAA's effective bid. Simply making these comparisons would be enough to alert the Faculty Plan Fiduciaries that TIAA's bid was not reasonable. Furthermore, from a recordkeeping perspective, Fidelity was viewed as a capable provider in the industry and, potentially a superior alternative to TIAA in the RFP review and provider search process. All

else being equal, TIAA's price should have been the same or lower than Fidelity's price. It is also important to keep in mind that these were the initial bids of what should have been a competitive sales and RFP process.

| <b>NYU WS Prospective Snapshot 2009 Analysis - Hypothetical Apples-to-Apples Bid comparison</b> |                           |                                  |                                  |
|---|---------------------------|----------------------------------|----------------------------------|
|   | <b>TIAA-CREF Proposed</b> | <b>Fidelity Hypothetical Bid</b> | <b>Vanguard Hypothetical Bid</b> |
| <b>Assets<sup>2</sup></b>   | \$1,623,348,680           | \$1,623,348,680                  | \$1,623,348,680                  |
| <b>2009 Year-end 5500 Participants</b>  | 11,064                    | 11,064                           | 11,064                           |
| <b>% of Proprietary Assets</b>  | 80%                       | 80%                              | 80%                              |
|   |                           |                                  |                                  |
| <b>Net RK Fees (%)</b>  | 0.30%                     | Less than .05%                   | Less than .05%                   |
| <b>Net RK Fees (\$/pp)</b>  | \$434.69                  | Less than \$80                   | Less than \$72.43                |
| <b>Total RK Fees (\$)</b>   | \$4,809,435               | Less than \$885,120              | Less than \$801,383              |

157. The same quick and simple analysis would have revealed that TIAA's 2009 RFP proposal was similarly outrageously overpriced for the Medical Plan as well. As illustrated in the chart, TIAA's fee for recordkeeping services would have been projected to be around \$3,450,935 (TIAA initially only proposed a lower fee for the new assets that would come from Vanguard but maintained its existing high fee on all the assets that were already on the TIAA recordkeeping platform) which works out to around \$514 per participant. As noted above, Fidelity's proposal for recordkeeping services for a plan with fewer participants and fewer assets was \$80 per participant which works out to around \$537,600 which is less than six times what TIAA had proposed. In fact, had NYU given Fidelity the opportunity to bid on all the participants and all the assets, Fidelity's bid would have been much lower than \$80, making TIAA's bid even more outrageously expensive. NYU's failure to request a separate individual bid for the Medical Plan prevents an easy hypothetical comparison.

| <b>NYU SOM Prospective Snapshot 2009 Analysis - Hypothetical Apples-to-Apples bid comparison</b> |                           |                                  |
|--|---------------------------|----------------------------------|
|  | <b>TIAA-CREF Proposed</b> | <b>Fidelity Hypothetical Bid</b> |
| <b>Assets<sup>2</sup></b>  | \$1,180,426,764           | \$1,180,426,764                  |
| <b>2009 Year-end 5500 Participants</b>   | 6,720                     | 6,720                            |
| <b>% of Proprietary Assets</b>   | 78%                       | 78%                              |
|  |                           |                                  |
| <b>Net RK Fees (%)</b>   | 0.29%                     | Less than .05%                   |
| <b>Net RK Fees (\$/pp)</b>   | \$513.53                  | Less than \$80                   |
| <b>Total RK Fees (\$)</b>  | \$3,450,935               | Less than \$537,600              |

158. Conducting this simple analysis would have caused a Plan Fiduciary to require much more information, clarification, and analysis of the proposals and would have recognized that the initial framework from the RFP did not elicit comparable bids from the providers. As a result, a similarly situated fiduciary would have clarified the details of its request and obtained information that would have enabled apples-to-apples comparisons. At a minimum, a similarly situated fiduciary would have begun the process by requesting two separate bids for each plan. The first would assume that all the assets and participants in each plan could be mapped over at conversion but would assume no proprietary assets. The second would be to assume all assets and participants could be mapped to the new recordkeeper at conversion and that the new recordkeeper would obtain the same portion of proprietary assets currently managed by TIAA. So, for the Faculty Plan the assumption would have been 80% for the Faculty Plan and 78% for the Medical Plan. Every provider would have provided pricing that was better than the pricing actually elicited by NYU through its process. And that would have been just their starting bid. Additionally, the price for the scenario in which the plan would have received proprietary assets would have been lower than the price in which the plan did not receive proprietary assets.

159. It is interesting, to say the least, that sometime between the end of 2009 and 2010 TIAA increased its net investment management fee and lowered the portion of the total expense ratio that could be used to pay for recordkeeping fees on many of its investment options. See



PX0755; PX0692; PX0759; PX0751. This had the effect of insulating millions of dollars of TIAA revenue from recordkeeping fee negotiations. Even had NYU conducted an appropriate apples-to-apples comparison of alternative pricing proposals using 2010 assets and the reduced 2010 revenue sharing rates, it would still have revealed that TIAA's fee proposal resulted in an average recordkeeping fee per participant well above \$200. That is still much higher than the initial Fidelity and Vanguard bids for smaller plans – not even an apples-to-apples comparison. That analysis for the NYU Faculty and Medical Plans is set forth below.

| <b>NYU WS Prospective Snapshot 2010 Analysis - Hypothetical Apples-to-Apples Bid comparison</b> |                           |                                  |                                  |
|---|---------------------------|----------------------------------|----------------------------------|
|   | <b>TIAA-CREF Proposed</b> | <b>Fidelity Hypothetical Bid</b> | <b>Vanguard Hypothetical Bid</b> |
| <b>Assets</b>   | \$1,786,975,566           | \$1,786,975,566                  | \$1,786,975,566                  |
| <b>2010 Year-end 5500 Participants</b>  | 11,678                    | 11,678                           | 11,678                           |
| <b>% of Proprietary Assets</b>  | 78%                       | 78%                              | 78%                              |
|   |                           |                                  |                                  |
| <b>Net RK Fees (%)</b>  | 0.17%                     | Less than .05%                   | Less than .05%                   |
| <b>Net RK Fees (\$/pp)</b>  | \$255.71                  | Less than \$80                   | Less than \$75.23                |
| <b>Total RK Fees (\$)</b>   | \$2,986,139               | Less than \$934,240              | Less than \$878,577              |

| <b>NYU SOM Prospective Snapshot 2010 Analysis - Hypothetical Apples-to-Apples bid comparison</b> |                           |                                  |
|--|---------------------------|----------------------------------|
|  | <b>TIAA-CREF Proposed</b> | <b>Fidelity Hypothetical Bid</b> |
| <b>Assets<sup>2</sup></b>  | \$1,286,531,411           | \$1,286,531,411                  |
| <b>2010 Year-end 5500 Participants</b>   | 8,085                     | 8,085                            |
| <b>% of Proprietary Assets</b>   | 76%                       | 76%                              |
|  |                           |                                  |
| <b>Net RK Fees (%)</b>   | 0.16%                     | Less than .05%                   |
| <b>Net RK Fees (\$/pp)</b>   | \$259.48                  | Less than \$80                   |
| <b>Total RK Fees (\$)</b>  | \$2,097,883               | Less than \$646,800              |

160. Because of this fundamental failure on the part of NYU to obtain comparable bids for comparable services, NYU did not come close to eliciting reasonable fees for recordkeeping services. NYU allowed that to happen and the participants ended up paying unreasonable recordkeeping fees as a result.

161. In summary, NYU's attempts to "seek competitive pricing information . . . [including] bids or quotes from other comparable firms to help it determine the prevailing rate

for similar services” were not meaningful, sufficient, effective, or what a similarly situated fiduciary would have done. NYU aggregated plans and compared a TIAA recordkeeping fee based on more participants and more assets to competitors’ bids in which the competitors would receive substantially fewer assets and likely fewer participants as well. It is not disputed in the industry that recordkeepers get economies of scale through more participants and plan sponsors have more leverage and buying power the more assets they have. See e.g., PX0526; PX0149.

162. The only factual basis for Ms. Wagner’s opinion related to recordkeeping fees is set forth in paragraph 39 (see Wagner Report at 12, para. 39) in which she notes that the fees the Plans paid for recordkeeping declined as a proportion of assets over the class period from 2009 through 2017. There are many flaws to drawing this conclusion.

163. The first is that all else being equal, as assets increase the same dollar amount of recordkeeping fees will be a smaller proportion of plan assets. This is required by basic math as set forth in the chart below and does not mean the actual amount of recordkeeping fees in dollars have decreased.

|                      |          |          |
|----------------------|----------|----------|
| Account Balance      | \$20,000 | \$10,000 |
| Fee Rate             | 0.125%   | 0.250%   |
| Total Fee in Dollars | \$25.00  | \$25.00  |

164. The fact that the recordkeeping fees as expressed in basis points declined as assets increased does not, in and of itself, prove anything. It does not mean that the participants are paying less on average for the recordkeeping services they are receiving. Ms. Wagner fails to even account for the fact that assets in the Plans markedly increased.

165. Second, a reduction in recordkeeping fees over time does not prove that at any point in time the fees being paid were reasonable. If a fair price for a Honda Accord is \$40,000 and I negotiate the price from the car dealer down from \$150,000 to \$100,000 (a 33% reduction),

that does not prove that the \$100,000 fee is reasonable. In fact, the results of the 2016 RFP process which elicited initial bids of between \$46 per-participant and \$90 per-participant from at least four bidders demonstrate how unreasonable the TIAA's fees were from 2009 through the present. PX0009 at CLC0000766. Nothing has fundamentally changed in the 403b recordkeeping industry. In fact, the quality of the services has generally increased over time, yet the fees charged have decreased dramatically as more and more plan sponsors have fulfilled their duties more effectively as a result of increased pricing transparency and the impact of fee disclosure regulations and fee litigation, among other reasons. Yet, it has taken NYU roughly nine years and litigation to negotiate TIAA down to a price for the Faculty Plan that, although still not in effect, will in the future be close to what the market was providing on a per participant basis for smaller plans back in 2009. Moreover, the reduction for the Medical Plan down to the proposed 4 bps would still be higher on a per-participant basis (~\$95 based on year-end 2016 assets) than what Fidelity offered in its initial bid for a much smaller plan with fewer participants back in 2009. Moreover, the 2016 TIAA proposal is an uncapped, asset-based recordkeeping fee. In the 2009 RFP process or the 2016 RFP process, NYU failed to properly consider the impact of alternative pricing structures available in the market and determine that an asset-based fee was the better option. To conduct an analysis of asset-based proposed recordkeeping fees consistent with industry practice, it is necessary to convert the asset-based fees to an effective snapshot per participant amount and to convert the per participant fees to an effective asset-based fee and compare the total dollars that would be paid under each of these fee alternative structures. NYU did not do this. Furthermore, to effectively evaluate an asset-based pricing structure it is necessary to identify market appreciation or depreciation assumptions as well as the participant

growth assumptions and compare the total fees over a period of time under the asset-based structure compared to the per participant revenue requirement structure.

166. Ms. Wagner also bases her conclusion on a statement that the TIAA recordkeeping fees were reasonable in the discussion in the January 10, 2011 Committee meeting in which NYU questioned the reasonableness of TIAA's fees and were apparently reassured that "TIAA's offer was more competitive than the offers of all other RFP responders." See paragraph 91. A careful review of the committee notes from that meeting reveals that what actually happened was that NYU had finally started to come close to figuring out that the original recordkeeping fee proposal from TIAA were not competitive and misleading. Specifically, at the January 10, 2011 Committee meeting the "Committee questioned whether the original proposal from TIAA was truly competitive, since it did not factor in the current revenue and the future revenue TIAA would receive under the existing contracts." See PX0477.

167. As demonstrated above, it is apparent that the analysis used in the 2009 RFP process to support the conclusion that TIAA's pricing was comparable to other offers was deeply flawed and deficient. There are no facts to support the conclusion TIAA's proposal "was more competitive than the offers of all other RFP responders." Moreover, the Committee never determined that the services that were offered by TIAA were fundamentally different or superior to those offered by competitors and that those differences warranted a significantly higher price. Further, despite NYU's suspicions about TIAA's pricing, it never undertook any additional analysis.

168. As a result, NYU simply accepted a cursory statement that TIAA's offer was more competitive. As was demonstrated above, it cannot be disputed that TIAA's actual fees for recordkeeping under their proposal were not competitive to alternatives. Additionally, it is not

disputed that NYU's 2009 analysis did not "factor in the current revenue and the future revenue TIAA would receive" from the several billion dollars of assets held in TIAA products.

Moreover, NYU erroneously allowed TIAA to claim these assets were not liquid without any negotiation PX0526. This was a fundamental deficiency.

169. The only time Ms. Wagner makes a comment on the actual amount of dollars paid by plan participants is when she asserts that the average per-participant recordkeeping fees paid by the participants in the Medical Plan after the consolidation generally exceeded the amounts paid by the participants in the Faculty Plan. Ms. Wagner points this out to argue that a failure to consolidate multiple recordkeepers "does not always result in higher fees." See Wagner paragraph 96. This conclusion is completely unwarranted in this case. It is common knowledge in the industry that a multiple recordkeeper structure results in duplication of many services and, all else being even close to equal, will have higher costs. The fact that the Medical Plan participants paid around \$190 annually on average from 2012 through 2017, which is higher than what the Faculty Plan participants paid, is not evidence against consolidation. Rather, it demonstrates the failure of NYU to negotiate effectively and ensure that only reasonable recordkeeping fees were paid to TIAA. There is no dispute that NYU received an initial bid from Fidelity for \$80 per participant for administration of both plans plus some additional costs related to on-site meeting requirements which would work out to around \$13 per participant. It is worth noting that the additional meeting costs would typically be negotiated away for no cost given the additional revenue that would be projected to be received as a result of these meetings. In any event, the proposed services were at least comparable to TIAA's services, if not higher in quality and were offered at a much lower price for fewer assets and fewer participants.

170. Ms. Wagner fails to cite any support for her conclusion that recordkeeping fees paid by Plans were reasonable during the class period. Accordingly, Ms. Wagner's opinion that NYU's actions were prudent "with respect to the related fees paid as compensation for [recordkeeping] services" is not supported by the facts of the case. See paragraph 109.

171. NYU's analysis of the proposed recordkeeping fees from the 2009 RFP was deeply flawed. As Ms. Wagner additionally points out, when hiring a service provider, the plan fiduciary decision-maker must engage in an objective process designed to elicit the information necessary to evaluate the following three criteria:

- The qualifications of the services provider,
- The quality of the services provided, and
- The reasonableness of the provider's fees in light of the services provided.

See paragraph 67.

172. If there were significant differences in the qualifications or the quality of the services provided, it is not noted by NYU. Accordingly, if there were only minor differences in the quality of the services then there should be only minor differences in the prices of the various recordkeepers.

173. There is nothing in the RFP analysis that warranted such a premium for the TIAA proposal. If anything, taking all the facts together leads to a conclusion that Fidelity's offering provided a higher quality. Specifically, the results of the analysis of the RFP responses breaks the services into different categories and summarizes the capabilities of each of the providers. An objective reading of that analysis cannot support a conclusion that any providers (with the possible exception of TIAA) were not qualified or were not able to provide quality services. The framework presented in the October 2009 presentation (see PX0526 at NYU0028145 – NYU0028153) reveals the following:

- Administration services. The offerings were essentially the same. TIAA reflected an inferior offering related to eligibility tracking. Any noted limitations related to providers other than TIAA for Data Aggregation services are tainted due to the flawed assumption that all assets could not move from TIAA.
- Participant Education and Communications. TIAA had limitations related to Automatic portfolio rebalancing and Personalized rate of return offerings. While Ms. Wagner notes that a key issue for NYU's decision was "participant investment education, a feature where TIAA was particularly adept[,] she provides no citation to any facts supporting the assertion that TIAA was "particularly adept." See Wagner paras. 51 and 90. In fact, however, the Committee actually acknowledged that "the communication and education abilities of TIAA were not as strong as Vanguard[.]" See March 21, 2011 Committee notes, PX0376 at CLC0039009. Additionally, there are several other facts that do not support a finding that TIAA warranted a premium based on participant education. For example, in the March 18, 2010 committee meeting, "Nancy commented that TIAA's call center system was often unreliable and that the intricacies of the NYU program resulted in a number of miscommunications with participants" and that sometime prior to 2009, when NYU requested custom communications, TIAA refused to provide them. Additionally, Ms. Wagner also notes that the additional participant education services "had the effect of increasing the fee required by the RFP responder. Wagner 51 and 90. In fact, however, any increases in the fees were immaterial compared to the higher price being proposed by TIAA. Moreover, the increased fees were proposed in each of the RFP responders' initial bid. Those initial fees are typically waived through the negotiation process, especially for large plans such as the Faculty Plan and the Medical Plan. This is partly because the recordkeepers recognize the marketing value of having the opportunity to sell proprietary products and services to plan participants through the participant education programs. In this case that is exactly what had happened with Vanguard prior to the RFP. While some members of the Committee were unaware of Vanguard's programs, upon investigation the Committee discovered that Vanguard was providing "onsite education to plan participants" at no additional cost. See PX0370 at CLC0038989.
- Guaranteed / Stable Value Account Information. The analysis did not conclude that any competitor was not qualified. TIAA's offering was inferior to most competitors, including Fidelity related to the assets being held in the insurers' general account. TIAA's offering appeared to be the most restrictive from a liquidity perspective.
- Investment Options. TIAA's offer was inferior in that it was not an open architecture offering as opposed to Diversified, Fidelity, and Great-West.

See PX0526 at NYU0028145 – NYU0028153. There is nothing in the commentary that suggests that the RFP analysis concluded that any vendor did not have the appropriate qualifications.

Additionally, the analysis reveals that TIAA's services were not superior to the competitors and, if anything may have been inferior.

174. There are several other facts that support the finding that the TIAA recordkeeping services were inferior to at least some of the competitors, i.e., Fidelity. For example, the Committee noted that TIAA was inferior from a technology perspective in the March 18, 2009 meeting and noted that some of the features the Committee wanted would not be available through TIAA until 2011.

175. In addition to NYU's failures related to the fees paid for recordkeeping, its process was flawed in many other respects. First, as Ms. Wagner states, in "order to evaluate the reasonableness of the fees quoted . . . plan fiduciaries should ensure they understand the provider's total fees, including both direct compensation from the plan or sponsor and any indirect compensation flowing from plan investments." Wagner Report para. 70. It is clear that the NYU Plan Fiduciaries did not fully understand the providers' fees and made no meaningful effort to understand. See, e.g., PX0477. In this case, NYU's analysis of the recordkeeper's offers did not include an analysis of the total revenue, both direct and indirect, captured by TIAA as a result of the relationship. This gave an unfair advantage to TIAA and made the analysis ineffective and not meaningful.

176. Second, Ms. Wagner notes that when evaluating the "annual fund operating expenses of an investment (total expense ratio), plan fiduciaries should "consider the extent to which revenue sharing payments from an investment fund's expense ratio are used to provide recordkeeping and other administrative services for the plan and its participants." See Wagner para. 85. To do that effectively requires NYU to understand and evaluate the "net investment management fee" which is the difference between the total expense ratio and the portion of the



total expense ratio attributable to the provision of recordkeeping fees (revenue sharing). There are no documents showing NYU ever evaluated the net investment management fees in this case. It illustrates that NYU fiduciaries did not fully understand all of the revenue associated with the Plans and did not understand the relationship between revenue sharing, recordkeeping fees, and the net investment management fees. A similarly situated to NYU plan fiduciary would understand that the net investment management fee is what the Plans pay for investment management services.

177. Third, as noted above, NYU inexplicably allowed TIAA to propose one fee for the assets that would move over from Vanguard while keeping a higher existing fee for the much larger portion of existing assets and participants. TIAA already had the plan set up on its recordkeeping system so, compared to all competitors other than Vanguard, TIAA would incur far fewer costs through consolidation than the other competitors. Despite these lower costs, TIAA's proposal, when calculating the total recordkeeping costs for all participants and all assets, was much higher than the competitors. See Cammack's Vendor Fee analysis (PX0526 at NYU0028152). The cost to TIAA of adding these incremental accounts is very close to the marginal cost of a participant since the plan has already been set up on TIAA's system. It is known in the industry that the marginal cost of an incremental participant is very low at all times during the class period. For example, Vanguard's variable costs for the Faculty Plan around 2013 were lower than \$20 per participant. PX0910; PX1609 at Vanguard-NYU\_0079051.

178. Fourth, and either compounding or causing many of the flaws above, it appears that NYU did not effectively or accurately ascertain the actual number of participants in each of the plans, which would also make it much more difficult to meaningfully compare recordkeeping fees from various providers. For example, in the 2009 RFP (PX0128 at CLC0022351) Cammack

informed the providers that there “were approximately 13,245 participants in all active retirement plans as of 3/31/2009.” Cammack’s participant count appears to include participants in six retirement plans, only two of which are at issue in this litigation. It should be noted that NYU plan fiduciaries have duties solely to the participants in each individual plan. Accordingly, the information in the 2009 RFP would imply that there must be at most 13,245 unique participants in the two plans at issue (Faculty Plan and Medical Plan). Yet, the 2009 5500 filings for the two plans at issue indicate that there were 11,064 participants in the Faculty Plan and 6,720 in the Medical Plan for a total of 17,784. It is extremely unlikely that both the 5500 filings and the 2009 RFP numbers are correct and there are no facts in the case to suggest any unusual participant activity that would account for such substantial disparities.<sup>88</sup> Without additional information it would require a conclusion that some unique individuals were participants in both the Faculty plan as well as the Medical Plan. This is extremely unlikely and there is no evidence in the record that supports a conclusion that such is the case. If there actually were fewer participants (e.g., around 13,245 instead of 17,784) it would increase the effective average per participant fees paid by the plan participants due to the asset based pricing structure employed by NYU. In other words, the fact that I used the higher estimate of participants would tend to understate the actual average fees paid by plan participants and accordingly is a conservative estimate from a damages perspective. There are several other documents that demonstrate NYU did not obtain accurate information about the correct number of participants to use in evaluating recordkeeping fees and the recordkeeping proposals in 2009. For example, NYU apparently believed that the total number of unique participants in the Faculty Plan was 15,802 as of 12/31/2010. Yet the 5500 for year-end 2010 indicates a total of 11,678 participants. Not having

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<sup>88</sup> NYU was the source of information for both these numbers, at least one of which was wrong.

a clear understanding of the total number of participants in each plan makes it impossible to conduct an appropriate apples-to-apples comparison of alternative recordkeeping fees.

179. Fifth, both the 2009 and 2016 RFP decision processes were run in a way that seemed to preordain the conclusion that TIAA would end up as the recordkeeper. For example, there was blatant, egregious bias related to the Committee Co-Chair's involvement in the first RFP. This included meeting separately with TIAA's point person in charge during the RFP process, accepting gratuities from TIAA, hiding the meetings from the other committee members, and covertly providing intelligence to TIAA on the thinking of the committee members about TIAA's chances. This is a remarkable pattern of bias by a fiduciary and a profound fiduciary breach. Unquestionably, Ms. Meagher was not only failing to act for the exclusive benefit of participants, but was affirmatively working for the benefit of TIAA and against the interest of Plan participants in paying only reasonable fees. Despite this highly improper conduct in the first RFP process, Ms. Meagher remained as Co-Chair of the Retirement Committee for the second RFP, which resulted in the same selection of TIAA. In fact, Ms. Meagher admitted that TIAA would be the surviving recordkeeper no matter what. Meagher Dep. pp. 117:01–119:07.

180. Sixth, Ms. Wagner and the Committee hypothesize concerns from some unnamed participants if there was a consolidation of recordkeepers. Yet, the Committee was aware, even prior to 2010, that it was a best practice to consolidate investment lineups and offer fewer options, regardless of whether participants would be upset. The Committee used this concern to support the preordained selection of TIAA as the sole recordkeeper for the Medical Plan even though there would be some disruption to all participants who were invested in Vanguard

investment options. In fact, NYU would have to disrupt some participants regardless of who was ultimately chosen as the recordkeeper.

181. Seventh, there are no facts suggesting that there would have been significant resistance to Vanguard being the sole recordkeeper. In fact, a quick review of the number of participants using Vanguard as a recordkeeper in the Faculty Plan compared to the number of participants using TIAA as the recordkeeper during the class period shows that over time a higher proportion of the participants have preferred the Vanguard offering over the TIAA offering. Similarly, the asset growth on the Vanguard platform has increased greater than the assets on the TIAA platform.

182. Finally, there are no facts that show that NYU used negotiating practices consistent with similarly situated fiduciaries throughout the 2009 RFP process. At each stage of the process NYU should have taken the lowest competitor's bid back to the other competitors and asked them to beat the lowest price to remain in consideration. This is commonly known as a best practice for Prudent Plan Fiduciaries. This was not done.

183. Contrary to the implications in Wagner's expert reports (see Wagner Rebuttal para.), Wagner agrees in her deposition that an RFP is the only reliable way to obtain the best recordkeeping fee stating "From my experience, I would have to say that even though there are other ways to get good pricing, I think an RFP is probably one of the most efficient ways to have decent pricing." Wagner Dep. 32:18–32:21. Moreover, Wagner acknowledges that if there is no RFP then Recordkeepers know that they are not in an auction process. See, Wagner Dep. 32:22–33:21.

184. Also contrary to the implications of her Report, Wagner acknowledges what is known by experts in the industry that large recordkeepers have been reducing their

recordkeeping fees to “below . . . where I would – I would -- I would think they -- they would be.” Wagner Dep. 34:03–34:04.. This validates the trend in the industry over the class period of recordkeeping fees declining.

185. Based on Wagner’s deposition testimony, she is not qualified to offer any opinions regarding the actual analysis of the recordkeeping proposals and prices. For example, Wagner states that she was not involved in the numerical calculations or the comparisons of RFP quantitatively. See p. 30, L 1-14. Accordingly Wagner is not in a position to opine on the reasonable fee paid by a Plan for the recordkeeping services. *See also*, Wagner P30, L15. Wagner P35, L18

186. Contrary to Wagner’s assertion, the NYU plans did not comply with the best-practice requirement that similarly situated fiduciaries go through a competitive RFP process every three to five years. In fact, the plans engaged in an RFP process in 2009 and did not engage in that process again until 2017. Moreover, the 2016 RFP issued by the Plan was only for services for the WS plan, not the SOM plan despite the fact that the last RFP was issued in more than 6 years from the last RFP issued in 2009. As a result, NYU compounded similar structural deficiencies that existed in the 2009 RFP process. For example, TIAA did not have to bid on roughly half of the total NYU relationship assets and participants. So its pricing would be based on all the participants and assets but TIAA would only have to compete against bidders bidding for the assets and participants of only the Faculty plan. As Cammack noted in the 2009 process, NYU should have put both plans out to bid in order to maximize its leverage. It is clear from this decision that the outcome to consolidate with TIAA was preordained.

**VI. NYU Plan fiduciaries caused the Plans to pay fees for recordkeeping and administrative services that were six to eight times higher than the reasonable, competitive rate for the same services during the Class period**

187. The prices available for recordkeeping services for some 403(b) plans within the defined contribution space do not reflect a transparent or moderately efficient market for services due primarily to the failure of some plan fiduciaries to take the time to understand the fees and negotiate appropriately with recordkeepers regarding the recordkeeping fees. Accordingly, the prices charged in some 403(b) plans are not necessarily “reasonable,” especially in light of the heavy proprietary nature of some 403(b) plans.

188. That said, the NYU Plans’ fiduciaries paid far more for recordkeeping services than what they could have obtained in the market if Plan fiduciaries followed a thorough RFP, sales, and negotiation process. The Plans’ losses are calculated by determining the total revenue to the Plans’ recordkeepers and subtracting the market rate for the same services received from the fourth quarter of 2010 to the present.

For Faculty plan

| <b>Year(s)</b> | <b>Reasonable Fee<br/>(per participant)</b> |
|----------------|---|
| 4Q2010–2Q2013  | \$31  |
| 3Q2013–2Q2016  | \$27  |
| 3Q2016–3Q2017  | \$23  |

For Medical Plan

| <b>Year(s)</b> | <b>Reasonable Fee<br/>(per participant)</b> |
|----------------|---|
| 4Q2010–2Q2013  | \$35  |
| 3Q2013–2Q2016  | \$31  |
| 3Q2016–3Q2017  | \$27  |

189. While Cammack informed the Plans' fiduciaries of the benefits of negotiating for lower recordkeeping fees, the fiduciaries failed to effectively do so throughout the stages of the sales and negotiation process.

190. First of all, a similarly situated fiduciary would not allow an RFP process to be tainted by secret meetings between fiduciaries making the decision to recommend a recordkeeper and the recordkeeper competing for the business. Second, plan fiduciaries would prohibit fiduciaries who will make the ultimate recommendation, from taking perks or meals from a competing recordkeeper. Third, a similarly situated fiduciary would not allow its fiduciary Committee members to be advising the competing recordkeeper regarding their RFP process. NYU improperly allowed this conduct and the result was a tainted process.

191. A similarly situated fiduciary would use competing bids in an RFP to negotiate a lower fee with the incumbent as well as prospective new recordkeepers. During this negotiation process, the plan fiduciary would leverage the asset management revenue generated from the proprietary investments to demand a discounted fee. The incumbent recordkeeper would perform a detailed financial analysis to determine the financial consequences of losing the client when there is a strong likelihood that the plan might divest from the incumbent's proprietary investments.

192. To illustrate the bargaining power that was available to the Plan during a competitive bidding process to obtain a reduced recordkeeping fee from TIAA and Vanguard because of the proprietary investments in the Plans, I prepared several financial models. These financial models are similar to analyses I performed in my professional capacity when evaluating thousands of pricing proposals and the impact of losing proprietary investments if the incumbent recordkeeper is replaced.

193. Under the first three financial models, I prepared a detailed analysis illustrating the financial evaluation an incumbent recordkeeper would undertake if a plan fiduciary was negotiating for a lower recordkeeping fee. The appropriate analysis would compare the firm's financial results under a scenario in which the firm retains the client and if the firm loses the client. The incumbent recordkeeper would have to make assumptions about the amount of proprietary assets that would be lost if the client leaves for another recordkeeper.

194. For illustrative purposes, I used each Plans' characteristics as of 4Q2009 because that is how the fiduciaries and bidders would initially create a snapshot financial view of the plan as if it were consolidated to one provider.

195. I then evaluated each Plans' attractiveness and bargaining power with both the incumbent recordkeeper and potential competitors in the context of the potential for consolidation.

196. Based on the timeline set forth by Cammack, both plans should have consolidated by Q4 2010. I used the 4Q2009 data to evaluate the Plan's attractiveness going into the consolidation, and I used the 4Q2012 data to evaluate the Plan's attractiveness and bargaining power when going through a competitive RFP process within an appropriate amount of time (three years) from the new prices that should have been obtained from the RFP and consolidation process.

197. Under each of these scenarios, I assumed TIAA-CREF maintained some of the annuity products under management but lost the rest of their proprietary investment options.

198. This is conservative because the governing Plan documents for both Plans, along with the Charter for the Committee, grant NYU the authority to choose the investment options



for the Plans. PX0533; PX1395; PX0974. Any annuity contract or custodial contract that differs from this is invalid and the Plan document governs. PX0537.

199. It is common in the industry that a change in recordkeeper leads to a change in investment options.

200. Under each of these scenarios, TIAA would lose several million dollars in net asset management revenue. The risk of losing this net asset management revenue would give TIAA an economic incentive to reduce the recordkeeping fee to retain the Plan as a recordkeeping client if the Plan fiduciaries conducted a thorough recordkeeping fee negotiation process through a RFP.

201. In my analysis, I used reasonable industry cost and other assumptions, based on my knowledge and experience in the industry. Any cost assumptions within reasonable industry ranges would not change the conclusions that can be drawn from the hypothetical scenario analysis. My scenario analysis does not require any assumption about the marketing value per participant for the other supplementary revenue TIAA gained from having participants on the recordkeeper's platform, and the unfettered access to sell proprietary products and services outside the Plans that NYU handed over to TIAA.

202. A brief summary of the pricing reductions provided by NYU also demonstrates the leverage that the Plan had and failed to use effectively to negotiate reasonable fees. At some point in late 2008 TIAA became aware that NYU had hired Cammack as Cammack began to request information. It is likely that TIAA was even informed that NYU was considering conducting an RFP.

203. Sometime in 2010, TIAA "reduced" its effective recordkeeping fee by shifting significant annuity revenue that was previously attributable to recordkeeping services over to

investment management revenue. This had the effect of reducing the average effective recordkeeping fee rate for the participants in both plans from around \$536 per participant to around \$280 per participant (from around 39 basis points to around 19 basis points).

204. When TIAA received the RFP, it offered to charge 15 basis points on any new assets while maintaining its existing fee rate on the assets currently at TIAA. This would have had the effect of reducing its fee by around 2 basis points to around to around \$264 in 2010 and 2011. This offer was not accepted.

205. TIAA then offered to provide recordkeeping for a fee rate of 13.8 basis points if TIAA was the sole recordkeeper for both the WS and SOM plans which would have resulted in over \$750 M in additional assets on the TIAA recordkeeping platform.

206. Ultimately, even as a result of the flawed RFP process, by 2012 TIAA agreed to reduce its recordkeeping fee for the WS plan to 13.8 basis points and to 10 basis points for the SOM plan when the assets from Vanguard were consolidated. Even with these reductions, the average price paid by the participants in both plans exceeded \$100 per participant.

207. In any event, this is evidence that the contracted rate that a plan might end up with is sometimes 50% less than the initial bid from the recordkeeper, especially when the plan is currently paying much higher than the market rate.

208. A similar scenario took place in the context of the 2016 RFP.

209. In 2015, prior to the issuance of the 2016 RFP, TIAA offered to reduce its Recordkeeping fee for the WS plan to 6.5 basis points if NYU consolidated all the recordkeeping and assets from Vanguard providing another example that recordkeepers generally provide lower recordkeeping fees when plans have more assets and participants. These reductions take place without regard for any service enhancements that are constantly being introduced by

recordkeepers every year. This reduction was almost a 50% reduction from what the participants were previously paying. The reduction would have still have resulted in the participants paying over \$100 annually for recordkeeping once the assets were consolidated.

210. Ultimately, by 2017 TIAA agreed to reduce its fee down to 3 basis points for the WS plan or \$42 per participant for the participants in both the WS and SOM Plans. Just as in 2009, the Plans were paying rates that were so much higher than the market rates that TIAA was able to significantly reduce its fees and still end up much higher than a reasonable fee.

**A. The administration of 403(b) and 401(k) Plans are comparable.**

211. From a recordkeeping perspective, there are no differences to the extent that mutual funds or other non-annuity options are available to participants. To the extent that annuities are offered, any differences from a recordkeeping perspective are material. The primary difference in the market in the delivery of 403(b) services relates to the fairly common request / expectation that the recordkeeper would provide onsite education / advice. In other words, many 403(b) plan sponsors expected the recordkeeper to commit to having employees of the recordkeeper at the location of the plan sponsor's employees on a regular basis, often 4-5 days a week. The recordkeeper's employee was expected to answer questions about the plan including questions about investments within the plan as well as other investment options and services offered outside the plan. All recordkeepers can provide employee meetings and investment education services in which communications specialists are available to answer questions from employees and participants. This is primarily a difference in the quantity of services – not a difference in the kind of services. In the case of NYU, it is clear that the employees of TIAA who provided these services at NYU functioned as aggressive salespeople

for TIAA both within the plan and for supplementary lines of business provided by TIAA.<sup>89</sup>

They were given unlimited access and no one even inquired as to what they were selling or how much revenue they were earning based on their connection with the Plans. Meagher Dep. p. 192.

212. While working at T. Rowe Price I was responsible for the financial evaluation and pricing of several large 403(b) plans. I did not use a different pricing model and the financial evaluation of our 403(b) plan clients was the same as the financial evaluation of our 401(k) plan clients. We did not use a different pricing/bidding model to propose services for new business or when negotiating with our existing 403(b) clients. All recordkeepers' pricing models could accommodate different requirements related to participant meetings and education.

213. Ms. Wagner asserts that the administration of 403(b) plans is costlier than 401(k) plans. Any differences are immaterial in the context of plans as large as the Faculty Plan and the Medical Plan. Moreover, a plan with approximately \$1 billion had enough "buying power" to negotiate away any alleged rationale for paying higher fees. In any event, the claim that annuities have greater costs because they require disclosure documents in comparison to mutual funds does not withstand scrutiny.

214. Mutual funds also need to provide frequent disclosures to plan participants related to fund manager changes and other changes. Recordkeepers have employees who are responsible for ensuring that disclosures are delivered properly. To the extent that this is common, recordkeepers develop business processes to automate these as much as possible. This is a common practice in all businesses, not just recordkeepers. As the largest distributor of

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<sup>89</sup>See Gretchen Morgenson, The Finger-Pointing at the Finance Firm TIAA, N.Y. Times, Oct. 21, 2017, <https://www.nytimes.com/2017/10/21/business/the-finger-pointing-at-the-financefirm-tiaa.html>; Gretchen Morgenson, TIAA Receives New York Subpoena on Sales Practices, N.Y. Times, Nov. 9, 2017, <https://www.nytimes.com/2017/11/09/business/tiaasubpoena.html>; See also Tara Siegel Bernard, If You Bought In to TIAA Based On Reputation, Check Your Accounts, N.Y. Times, Nov. 13, 2017, <https://www.nytimes.com/2017/11/13/your-money/tiaa-403b.html>.

annuities in 403(b) plans, it strains credulity to believe that TIAA had not developed automated processes to reduce the costs of distributing these disclosures, just as all recordkeepers have developed processes to automate as much as possible the distribution of disclosures related to many different investment options such as mutual funds, collective trusts, separate accounts, etc. The recordkeeper merely needs to provide that information to individual participants. Wagner 43 and fn 12.

215. Additionally, the requirement to accurately track the “vintage” of contributions for annuities is also something that can be easily accommodated by recordkeepers. And as the largest distributor of annuities within 403(b) plans TIAA would have certainly built automation to minimize the costs of recordkeeping the vintage component of annuities.

216. In summary, the differences in recordkeeping 403(b) plans due to its inclusion of annuities are not material in the context of plans the size of the Faculty Plan and the Medical Plan, and would have been negotiated away by similarly situated plan fiduciaries.

**VII. The failures by the NYU fiduciaries to do what similarly situated fiduciaries would do caused the Plan to incur losses that exceed \$42 million.**

217. To calculate the losses to the Plan that resulted from the NYU fiduciaries failures to perform their fiduciary duty comparable to other similarly situated fiduciaries, I first calculated an estimate of what the plans paid for the bundle of recordkeeping services provided by both TIAA and Vanguard.

218. To do this I utilized a process that is commonly accepted in the industry and performed regularly by plan fiduciaries, recordkeepers, and industry consultants and advisors:

- Identify the value of the assets in the plan as of a given date (typically the last day of a year or quarter). The assets I use in my calculates are contained in the Parties Stipulation regarding Plan data.

- Determine the underlying investment options or other holdings for all of the assets in the Plans as of that given date. The investment options are also contained in the Parties Stipulation regarding Plan data.
- Identify the portion of the expense ratio associated with each investment option that is allocable to the provision of recordkeeping services. The expense ratios for each option and the associated portion that was allocated to the Plans' recordkeeping services is listed below:

Expense Ratios for the Faculty Plan (derived from PX0456, PX0497, PX0692, PX0696, PX0700, PX704, PX0713, PX0718, PX0755, PX0862, PX0902, PX0905, PX0918, PX0924, PX1614)

| Fund Name   | Ticker               | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Vanguard<br>Small Cap<br>Index<br>(Inv)                 | NAESX                | 0.28%                    | 0.28%                    | 0.31%                    | 0.31%                    | 0.24%                    | 0.24%                    | 0.23%                    | 0.20%                    | 0.18%                    |
| CREF<br>Bond<br>Market<br>(No class /<br>R3)            | None /<br>QCBMI<br>X | 0.455<br>%               | 0.405<br>%               | 0.435<br>%               | 0.445<br>%               | 0.440<br>%               | 0.450<br>%               | 0.370<br>%               | 0.345<br>%               | 0.290<br>%               |
| CREF<br>Equity<br>Index (No<br>class / R3)              | None /<br>QCEQI<br>X | 0.420<br>%               | 0.385<br>%               | 0.415<br>%               | 0.425<br>%               | 0.420<br>%               | 0.391<br>%               | 0.290<br>%               | 0.255<br>%               | 0.225<br>%               |
| CREF<br>Global<br>Equities<br>(No class /<br>R3)        | None /<br>QCGLI<br>X | 0.510<br>%               | 0.460<br>%               | 0.485<br>%               | 0.515<br>%               | 0.525<br>%               | 0.465<br>%               | 0.375<br>%               | 0.370<br>%               | 0.330<br>%               |
| CREF<br>Growth<br>(No class /<br>R3)                    | None /<br>QCGRI<br>X | 0.465<br>%               | 0.430<br>%               | 0.450<br>%               | 0.470<br>%               | 0.460<br>%               | 0.415<br>%               | 0.320<br>%               | 0.310<br>%               | 0.265<br>%               |
| CREF<br>Inflation-<br>Linked<br>Bond (No<br>class / R3) | None /<br>QCILI<br>X | 0.450<br>%               | 0.405<br>%               | 0.435<br>%               | 0.445<br>%               | 0.440<br>%               | 0.405<br>%               | 0.315<br>%               | 0.275<br>%               | 0.240<br>%               |
| CREF<br>Money   | None /<br>QCMML      | 0.415<br>%               | 0.375<br>%               | 0.420<br>%               | 0.415<br>%               | 0.410<br>%               | 0.395<br>%               | 0.315<br>%               | 0.270<br>%               | 0.230<br>%               |

| Fund Name  | Ticker               | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|--|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Market<br>(No class /<br>R3)                             | IX                   |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| CREF<br>Social<br>Choice<br>(No class /<br>R3)           | None /<br>QCSCI<br>X | 0.440<br>%               | 0.405<br>%               | 0.430<br>%               | 0.455<br>%               | 0.445<br>%               | 0.405<br>%               | 0.330<br>%               | 0.315<br>%               | 0.265<br>%               |
| CREF<br>Stock (No<br>class / R3)                         | None /<br>QCSTI<br>X | 0.485<br>%               | 0.435<br>%               | 0.470<br>%               | 0.485<br>%               | 0.485<br>%               | 0.455<br>%               | 0.370<br>%               | 0.380<br>%               | 0.320<br>%               |
| TIAA<br>Real<br>Estate                                   | QREA<br>RX           | 1.010<br>%               | 1.060<br>%               | 1.010<br>%               | 0.920<br>%               | 0.895<br>%               | 0.870<br>%               | 0.865<br>%               | 0.885<br>%               | 0.850<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2010<br>(Retire /<br>Inst) | TCLEX<br>/<br>TCTIX  | 0.660<br>%               | 0.650<br>%               | 0.640<br>%               | 0.410<br>%               | 0.400<br>%               | 0.390<br>%               | 0.370<br>%               | 0.370<br>%               | 0.370<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2025<br>(Retire /<br>Inst) | TCLFX<br>/<br>TCYIX  | 0.700<br>%               | 0.690<br>%               | 0.680<br>%               | 0.460<br>%               | 0.440<br>%               | 0.430<br>%               | 0.410<br>%               | 0.410<br>%               | 0.410<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2015<br>(Retire /<br>Inst) | TCLIX<br>/<br>TCNIX  | 0.670<br>%               | 0.670<br>%               | 0.660<br>%               | 0.420<br>%               | 0.410<br>%               | 0.400<br>%               | 0.380<br>%               | 0.380<br>%               | 0.380<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2030<br>(Retire /<br>Inst) | TCLNX<br>/<br>TCRIX  | 0.710<br>%               | 0.710<br>%               | 0.690<br>%               | 0.470<br>%               | 0.450<br>%               | 0.440<br>%               | 0.420<br>%               | 0.420<br>%               | 0.420<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2040                       | TCLOX<br>/<br>TCOIX  | 0.720<br>%               | 0.720<br>%               | 0.700<br>%               | 0.490<br>%               | 0.470<br>%               | 0.460<br>%               | 0.440<br>%               | 0.440<br>%               | 0.440<br>%               |

| Fund Name   | Ticker            | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| (Retire /<br>Inst)                                  |                   |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| TIAA-<br>CREF<br>Lifecycle<br>2035                  |                   |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| (Retire /<br>Inst)                                  | TCLR<br>X / TCIX  | 0.720<br>%               | 0.720<br>%               | 0.700<br>%               | 0.480<br>%               | 0.470<br>%               | 0.450<br>%               | 0.430<br>%               | 0.450<br>%               | 0.450<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2020                  | TCLTX             |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| (Retire /<br>Inst)                                  | / TCIX            | 0.690<br>%               | 0.670<br>%               | 0.670<br>%               | 0.440<br>%               | 0.420<br>%               | 0.410<br>%               | 0.390<br>%               | 0.400<br>%               | 0.400<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2050                  |                   |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| (Retire /<br>Inst)                                  | TLFR<br>X / TFTIX | 0.720<br>%               | 0.710<br>%               | 0.710<br>%               | 0.490<br>%               | 0.470<br>%               | 0.460<br>%               | 0.440<br>%               | 0.450<br>%               | 0.450<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>Retiremen<br>t Income | TLIRX             |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| (Retire /<br>Inst)                                  | / TLRIX           | 0.630<br>%               | 0.650<br>%               | 0.630<br>%               | 0.390<br>%               | 0.380<br>%               | 0.380<br>%               | 0.360<br>%               | 0.370<br>%               | 0.370<br>%               |
| TIAA-<br>CREF<br>Lifecycle<br>2060<br>(Inst)        | TLXN<br>X         |                          |                          |                          |                          |                          |                          |                          | 0.450<br>%               | 0.450<br>%               |
| TIAA-<br>CREF<br>Small-Cap<br>Blend<br>Index        | TRBIX             |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| (Retire /<br>Inst)                                  | / TISBX           | 0.350<br>%               | 0.400<br>%               | 0.420<br>%               | 0.150<br>%               | 0.150<br>%               | 0.160<br>%               | 0.130<br>%               | 0.060<br>%               | 0.060<br>%               |
| TIAA-<br>CREF<br>Large-Cap                          | TRCV<br>X / VILVX | 0.350<br>%               | 0.340<br>%               | 0.340<br>%               | 0.080<br>%               | 0.080<br>%               | 0.070<br>%               | 0.060<br>%               | 0.060<br>%               | 0.060<br>%               |



| Fund Name   | Ticker                   | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Value Index<br>(Retire / Inst)                                |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| TIAA-CREF<br>Mid-Cap Growth<br>(Retire / Inst)                | TRGM<br>X /<br>TRPW<br>X | 0.810<br>%               | 0.790<br>%               | 0.770<br>%               | 0.490<br>%               | 0.480<br>%               | 0.470<br>%               | 0.470<br>%               | 0.470<br>%               | 0.470<br>%               |
| TIAA-CREF<br>International Equity<br>Index<br>(Retire / Inst) | TRIEX<br>/<br>TCIEX      | 0.360<br>%               | 0.410<br>%               | 0.350<br>%               | 0.090<br>%               | 0.080<br>%               | 0.070<br>%               | 0.060<br>%               | 0.060<br>%               | 0.060<br>%               |
| TIAA-CREF<br>Mid-Cap Value<br>(Retire / Inst)                 | TRVR<br>X /<br>TIMVX     | 0.770<br>%               | 0.810<br>%               | 0.740<br>%               | 0.460<br>%               | 0.460<br>%               | 0.450<br>%               | 0.410<br>%               | 0.420<br>%               | 0.410<br>%               |
| TIAA-CREF<br>Lifecycle 2045<br>(Retire / Inst)                | TTFRX<br>/ TTFIX         | 0.730<br>%               | 0.720<br>%               | 0.710<br>%               | 0.490<br>%               | 0.470<br>%               | 0.460<br>%               | 0.440<br>%               | 0.450<br>%               | 0.450<br>%               |
| TIAA-CREF<br>Lifecycle 2055<br>(Inst)                         | TTRIX                    |                          |                          |                          | 0.490<br>%               | 0.470<br>%               | 0.460<br>%               | 0.440<br>%               | 0.450<br>%               | 0.450<br>%               |
| Vanguard<br>Asset Allocation<br>(Inv)                         | VAAP<br>X                | 0.39%                    | 0.27%                    | 0.27%                    |                          |                          |                          |                          |                          |                          |
| Vanguard<br>LifeStrategy Growth<br>(Inv)                      | VASG<br>X                | 0.21%                    | 0.23%                    | 0.17%                    | 0.17%                    | 0.17%                    | 0.17%                    | 0.17%                    | 0.15%                    | 0.15%                    |

| Fund Name                                   | Ticker    | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Vanguard LifeStrategy Income (Inv)          | VASIX     | 0.22%                    | 0.23%                    | 0.13%                    | 0.13%                    | 0.14%                    | 0.14%                    | 0.14%                    | 0.12%                    | 0.12%                    |
| Vanguard Selected Value (Inv)               | VASV<br>X | 0.45%                    | 0.52%                    | 0.47%                    | 0.45%                    | 0.38%                    | 0.44%                    | 0.44%                    | 0.39%                    | 0.35%                    |
| Vanguard Intermediate-Term Bond Index (Inv) | VBIIX     | 0.22%                    | 0.22%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.16%                    | 0.15%                    |
| Vanguard Balanced Index (Inv)               | VBINX     | 0.25%                    | 0.25%                    | 0.26%                    | 0.26%                    | 0.24%                    | 0.24%                    | 0.24%                    | 0.22%                    | 0.19%                    |
| Vanguard Short-Term Bond Index (Inv)        | VBISX     | 0.22%                    | 0.22%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.16%                    | 0.15%                    |
| Vanguard Long-Term Bond Index (Inv)         | VBLTX     | 0.22%                    | 0.22%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.16%                    | 0.15%                    |
| Vanguard Total Bond Market Index (Inv)      | VBMF<br>X | 0.22%                    | 0.22%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.16%                    | 0.15%                    |
| Vanguard Capital Value (Inv)                | VCVL<br>X | 0.52%                    | 0.44%                    | 0.44%                    | 0.58%                    | 0.47%                    | 0.41%                    | 0.47%                    | 0.50%                    |                          |
| Vanguard Convertibl                         | VCVS<br>X | 0.72%                    | 0.72%                    | 0.68%                    | 0.59%                    | 0.52%                    | 0.63%                    | 0.41%                    | 0.38%                    |                          |

| Fund Name  | Ticker               | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|--|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| e<br>Securities<br>(Inv)                                   |                      |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Vanguard<br>Dividend<br>Growth<br>(Inv)                    | VDIGX                | 0.32%                    | 0.38%                    | 0.34%                    | 0.34%                    | 0.29%                    | 0.31%                    | 0.31%                    | 0.33%                    | 0.30%                    |
| Vanguard<br>Developed Markets<br>Index (Inv<br>/ Inv)      | VDMI<br>X /<br>VDVIX | 0.29%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.17%                    |
| Vanguard<br>Emerging<br>Markets<br>Stock<br>Index<br>(Inv) | VEIEX                | 0.39%                    | 0.40%                    | 0.33%                    | 0.33%                    | 0.33%                    | 0.33%                    | 0.33%                    | 0.33%                    | 0.32%                    |
| Vanguard<br>Equity-<br>Income<br>(Inv)                     | VEIPX                | 0.37%                    | 0.36%                    | 0.31%                    | 0.31%                    | 0.30%                    | 0.30%                    | 0.29%                    | 0.26%                    | 0.26%                    |
| Vanguard<br>European<br>Stock<br>Index<br>(Inv)            | VEUR<br>X            | 0.29%                    | 0.27%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    |
| Vanguard<br>Extended<br>Market<br>Index<br>(Inv)           | VEXM<br>X            | 0.30%                    | 0.30%                    | 0.30%                    | 0.30%                    | 0.28%                    | 0.24%                    | 0.23%                    | 0.22%                    | 0.21%                    |
| Vanguard<br>Explorer<br>(Inv)                              | VEXPX                | 0.51%                    | 0.54%                    | 0.49%                    | 0.50%                    | 0.51%                    | 0.51%                    | 0.53%                    | 0.49%                    | 0.46%                    |
| Vanguard<br>Target<br>Retirement 2055<br>(Inv)             | VFFVX                |                          | 0.22%                    | 0.19%                    | 0.19%                    | 0.18%                    | 0.18%                    | 0.18%                    | 0.16%                    | 0.16%                    |
| Vanguard<br>Intermedi                                      | VFICX                | 0.26%                    | 0.24%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    |

| Fund Name   | Ticker    | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| ate-Term<br>Investmen<br>t-Grade<br>(Inv)                   |           |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Vanguard<br>Target<br>Retiremen<br>t 2050<br>(Inv)          | VFIFX     | 0.19%                    | 0.20%                    | 0.19%                    | 0.19%                    | 0.18%                    | 0.18%                    | 0.18%                    | 0.16%                    | 0.16%                    |
| Vanguard<br>GNMA<br>(Inv)                                   | VFIIX     | 0.23%                    | 0.23%                    | 0.23%                    | 0.23%                    | 0.21%                    | 0.21%                    | 0.21%                    | 0.21%                    | 0.21%                    |
| Vanguard<br>500 Index<br>(Inv)                              | VFINX     | 0.18%                    | 0.18%                    | 0.17%                    | 0.17%                    | 0.17%                    |                          |                          |                          |                          |
| Vanguard<br>Short-<br>Term<br>Treasury<br>(Inv)             | VFISX     | 0.22%                    | 0.22%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    |
| Vanguard<br>Intermedi<br>ate-Term<br>Treasury<br>(Inv)      | VFITX     | 0.25%                    | 0.25%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    |
| Vanguard<br>Target<br>Retiremen<br>t 2040<br>(Inv)          | VFOR<br>X | 0.19%                    | 0.20%                    | 0.19%                    | 0.19%                    | 0.18%                    | 0.18%                    | 0.18%                    | 0.16%                    | 0.16%                    |
| Vanguard<br>Short-<br>Term<br>Investmen<br>t-Grade<br>(Inv) | VFSTX     | 0.26%                    | 0.24%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    |
| Vanguard<br>FTSE<br>Social<br>Index<br>(Inv)                | VFTSX     | 0.29%                    | 0.25%                    | 0.29%                    | 0.29%                    | 0.28%                    | 0.28%                    | 0.27%                    | 0.25%                    | 0.22%                    |
| Vanguard  | VGEM      | 0.32%                    | 0.38%                    | 0.34%                    | 0.34%                    | 0.31%                    | 0.38%                    | 0.38%                    | 0.37%                    | 0.41%                    |

| Fund Name  | Ticker    | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|--|-----------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Energy<br>(Inv)  | X         |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard<br>Growth<br>Equity<br>(Inv)                          | VGEQ<br>X | 0.60%                        | 0.51%                        | 0.51%                        | 0.52%                        | 0.54%                        |                              |                              |                              |                              |
| Vanguard<br>Health<br>Care (Inv)                               | VGHC<br>X | 0.33%                        | 0.36%                        | 0.35%                        | 0.35%                        | 0.35%                        | 0.35%                        | 0.35%                        | 0.36%                        | 0.37%                        |
| Vanguard<br>Precious<br>Metals<br>and<br>Mining<br>(Inv)       | VGPM<br>X | 0.39%                        | 0.27%                        | 0.27%                        | 0.27%                        | 0.26%                        | 0.25%                        | 0.25%                        |                              |                              |
| Vanguard<br>REIT<br>Index<br>(Inv)                             | VGSIX     | 0.26%                        | 0.26%                        | 0.26%                        | 0.26%                        | 0.24%                        | 0.24%                        | 0.24%                        | 0.26%                        | 0.26%                        |
| Vanguard<br>STAR<br>(Inv)                                      | VGSTX     | 0.32%                        | 0.37%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.32%                        |
| Vanguard<br>Total<br>Internatio<br>nal Stock<br>Index<br>(Inv) | VGTSX     | 0.34%                        | 0.32%                        | 0.26%                        | 0.22%                        | 0.22%                        | 0.22%                        | 0.22%                        | 0.19%                        | 0.18%                        |
| Vanguard<br>Capital<br>Opportuni<br>ty (Inv)                   | VHCO<br>X | 0.52%                        | 0.50%                        | 0.48%                        | 0.48%                        | 0.48%                        | 0.48%                        | 0.47%                        | 0.45%                        | 0.45%                        |
| Vanguard<br>Global<br>Equity<br>(Inv)                          | VHGE<br>X | 0.58%                        | 0.44%                        | 0.44%                        | 0.54%                        | 0.59%                        | 0.61%                        | 0.61%                        | 0.57%                        | 0.51%                        |
| Vanguard<br>Growth<br>Index<br>(Inv)                           | VIGRX     | 0.28%                        | 0.28%                        | 0.26%                        | 0.26%                        | 0.24%                        | 0.24%                        | 0.23%                        | 0.22%                        | 0.18%                        |
| Vanguard<br>Mid-Cap  | VIMSX     | 0.27%                        | 0.27%                        | 0.26%                        | 0.26%                        | 0.24%                        | 0.24%                        | 0.23%                        | 0.20%                        | 0.18%                        |

| Fund Name  | Ticker    | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|--|-----------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Index<br>(Inv)   |           |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard<br>Internatio<br>nal<br>Explorer<br>(Inv)         | VINEX     | 0.42%                        | 0.45%                        | 0.39%                        | 0.42%                        | 0.43%                        | 0.36%                        | 0.40%                        | 0.42%                        | 0.41%                        |
| Vanguard<br>Institution<br>al Index<br>(Inst)              | VINIX     |                              |                              |                              |                              |                              | 0.04%                        | 0.04%                        | 0.04%                        | 0.04%                        |
| Vanguard<br>Inflation-<br>Protected<br>Securities<br>(Inv) | VIPSX     | 0.25%                        | 0.25%                        | 0.22%                        | 0.22%                        | 0.20%                        | 0.20%                        | 0.20%                        | 0.20%                        | 0.20%                        |
| Vanguard<br>Small Cap<br>Growth<br>Index<br>(Inv)          | VISGX     | 0.28%                        | 0.28%                        | 0.26%                        | 0.26%                        | 0.24%                        | 0.24%                        | 0.23%                        | 0.20%                        | 0.19%                        |
| Vanguard<br>Small Cap<br>Value<br>Index<br>(Inv)           | VISVX     | 0.28%                        | 0.28%                        | 0.37%                        | 0.37%                        | 0.24%                        | 0.24%                        | 0.23%                        | 0.20%                        | 0.19%                        |
| Vanguard<br>Value<br>Index<br>(Inv)                        | VIVAX     | 0.26%                        | 0.26%                        | 0.26%                        | 0.26%                        | 0.24%                        | 0.24%                        | 0.23%                        | 0.20%                        | 0.18%                        |
| Vanguard<br>Federal<br>Money<br>Market<br>(Inv)            | VMFX<br>X | 0.25%                        | 0.29%                        | 0.19%                        | 0.19%                        | 0.14%                        | 0.14%                        | 0.11%                        | 0.11%                        | 0.11%                        |
| Vanguard<br>Mid Cap<br>Growth<br>(Inv)                     | VMGR<br>X | 0.61%                        | 0.60%                        | 0.51%                        | 0.53%                        | 0.54%                        | 0.51%                        | 0.46%                        | 0.43%                        | 0.36%                        |
| Vanguard<br>Prime<br>Money                                 | VMMX<br>X | 0.25%                        | 0.25%                        | 0.20%                        | 0.20%                        | 0.17%                        | 0.17%                        | 0.16%                        |                              |                              |

| Fund Name                                       | Ticker    | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Market (Inv)                                    |           |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Vanguard Morgan Growth (Inv)                    | VMRG<br>X | 0.46%                    | 0.48%                    | 0.44%                    | 0.42%                    | 0.40%                    | 0.39%                    | 0.40%                    | 0.40%                    | 0.38%                    |
| Vanguard Pacific Stock Index (Inv)              | VPAC<br>X | 0.29%                    | 0.27%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.26%                    |
| Vanguard PRIMEC AP Core (Inv)                   | VPCCX     | 0.55%                    | 0.51%                    | 0.51%                    | 0.51%                    | 0.50%                    | 0.50%                    | 0.50%                    | 0.47%                    | 0.46%                    |
| Vanguard PRIMEC AP (Inv)                        | VPMC<br>X | 0.50%                    | 0.49%                    | 0.45%                    | 0.45%                    | 0.45%                    | 0.45%                    | 0.44%                    | 0.40%                    | 0.39%                    |
| Vanguard Growth & Income (Inv)                  | VQNP<br>X | 0.37%                    | 0.32%                    | 0.34%                    | 0.34%                    | 0.36%                    | 0.36%                    | 0.37%                    | 0.34%                    | 0.34%                    |
| Vanguard LifeStrategy Conservative Growth (Inv) | VSCG<br>X | 0.22%                    | 0.24%                    | 0.15%                    | 0.15%                    | 0.15%                    | 0.15%                    | 0.15%                    | 0.13%                    | 0.13%                    |
| Vanguard Strategic Equity (Inv)                 | VSEQX     | 0.32%                    | 0.30%                    | 0.31%                    | 0.33%                    | 0.29%                    | 0.29%                    | 0.27%                    | 0.21%                    | 0.18%                    |
| Vanguard Short-Term Federal (Inv)               | VSGB<br>X | 0.22%                    | 0.22%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    |
| Vanguard LifeStrategy Moderate                  | VSMG<br>X | 0.22%                    | 0.23%                    | 0.16%                    | 0.16%                    | 0.16%                    | 0.16%                    | 0.16%                    | 0.14%                    | 0.14%                    |

| Fund Name   | Ticker               | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Growth<br>(Inv)   |                      |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Vanguard<br>Target<br>Retirement<br>2010<br>(Inv)             | VTEN<br>X            | 0.19%                    | 0.17%                    | 0.17%                    | 0.17%                    | 0.16%                    | 0.16%                    | 0.16%                    | 0.14%                    | 0.13%                    |
| Vanguard<br>Target<br>Retirement<br>2030<br>(Inv)             | VTTH<br>X            | 0.19%                    | 0.19%                    | 0.18%                    | 0.18%                    | 0.17%                    | 0.17%                    | 0.17%                    | 0.15%                    | 0.15%                    |
| Vanguard<br>Target<br>Retirement<br>Income<br>(Inv)           | VTINX                | 0.19%                    | 0.18%                    | 0.17%                    | 0.17%                    | 0.16%                    | 0.16%                    | 0.16%                    | 0.14%                    | 0.13%                    |
| Vanguard<br>Target<br>Retirement<br>2045<br>(Inv)             | VTIVX                | 0.18%                    | 0.20%                    | 0.19%                    | 0.19%                    | 0.18%                    | 0.18%                    | 0.18%                    | 0.16%                    | 0.16%                    |
| Vanguard<br>Target<br>Retirement<br>2005<br>(Inv)             | VTOV<br>X            | 0.18%                    | 0.18%                    | 0.17%                    |                          |                          |                          |                          |                          |                          |
| Vanguard<br>International Value<br>(Inv)                      | VTRIX                | 0.47%                    | 0.45%                    | 0.39%                    | 0.39%                    | 0.41%                    | 0.43%                    | 0.44%                    | 0.46%                    | 0.43%                    |
| Vanguard<br>Total<br>Stock<br>Market<br>Index (Inv<br>/ Inst) | VTSM<br>X /<br>VITSX | 0.18%                    | 0.18%                    | 0.18%                    | 0.18%                    | 0.17%                    | 0.17%                    | 0.04%                    | 0.04%                    | 0.03%                    |
| Vanguard<br>Target<br>Retirement<br>2035<br>(Inv)             | VTTH<br>X            | 0.18%                    | 0.20%                    | 0.19%                    | 0.19%                    | 0.18%                    | 0.18%                    | 0.18%                    | 0.15%                    | 0.15%                    |



| Fund Name                                    | Ticker    | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|--|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Vanguard Target Retirement 2060 (Inv)        | VTTSX     |                          |                          |                          | 0.18%                    | 0.18%                    | 0.18%                    | 0.18%                    | 0.16%                    | 0.16%                    |
| Vanguard Target Retirement 2025 (Inv)        | VTTV<br>X | 0.18%                    | 0.19%                    | 0.18%                    | 0.18%                    | 0.17%                    | 0.17%                    | 0.17%                    | 0.15%                    | 0.14%                    |
| Vanguard Target Retirement 2020 (Inv)        | VTWN<br>X | 0.19%                    | 0.18%                    | 0.17%                    | 0.17%                    | 0.16%                    | 0.16%                    | 0.16%                    | 0.14%                    | 0.14%                    |
| Vanguard Target Retirement 2015 (Inv)        | VTXV<br>X | 0.18%                    | 0.17%                    | 0.16%                    | 0.17%                    | 0.16%                    | 0.16%                    | 0.16%                    | 0.14%                    | 0.14%                    |
| Vanguard Long-Term Treasury (Inv)            | VUSTX     | 0.25%                    | 0.25%                    | 0.22%                    | 0.22%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    | 0.20%                    |
| Vanguard Admiral Treasury Money Market (Inv) | VUSX<br>X | 0.12%                    | 0.15%                    | 0.11%                    | 0.11%                    | 0.09%                    | 0.09%                    | 0.09%                    |                          |                          |
| Vanguard U.S. Value (Inv)                    | VUVL<br>X | 0.46%                    | 0.41%                    | 0.29%                    | 0.31%                    | 0.29%                    | 0.30%                    | 0.29%                    | 0.26%                    | 0.23%                    |
| Vanguard High-Yield Corporate (Inv)          | VWEH<br>X | 0.32%                    | 0.28%                    | 0.25%                    | 0.25%                    | 0.23%                    | 0.23%                    | 0.23%                    | 0.23%                    | 0.23%                    |
| Vanguard Wellington                          | VWEL<br>X | 0.35%                    | 0.34%                    | 0.30%                    | 0.27%                    | 0.25%                    | 0.26%                    | 0.26%                    | 0.26%                    | 0.25%                    |

| Fund Name                                 | Ticker    | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|---|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| n (Inv)                                   |           |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Vanguard Long-Term Investment-Grade (Inv) | VWES<br>X | 0.28%                    | 0.26%                    | 0.24%                    | 0.24%                    | 0.22%                    | 0.22%                    | 0.22%                    | 0.21%                    | 0.22%                    |
| Vanguard International Growth (Inv)       | VWIG<br>X | 0.53%                    | 0.53%                    | 0.47%                    | 0.47%                    | 0.48%                    | 0.48%                    | 0.47%                    | 0.47%                    | 0.46%                    |
| Vanguard Wellesley Income (Inv)           | VWIN<br>X | 0.33%                    | 0.31%                    | 0.28%                    | 0.25%                    | 0.25%                    | 0.25%                    | 0.25%                    | 0.23%                    | 0.22%                    |
| Vanguard Windsor (Inv)                    | VWND<br>X | 0.37%                    | 0.33%                    | 0.33%                    | 0.39%                    | 0.41%                    | 0.37%                    | 0.38%                    | 0.39%                    | 0.30%                    |
| Vanguard Windsor II (Inv)                 | VWNF<br>X | 0.39%                    | 0.38%                    | 0.35%                    | 0.35%                    | 0.35%                    | 0.36%                    | 0.36%                    | 0.34%                    | 0.33%                    |
| Vanguard U.S. Growth (Inv)                | VWUS<br>X | 0.49%                    | 0.53%                    | 0.44%                    | 0.44%                    | 0.45%                    | 0.45%                    | 0.44%                    | 0.47%                    | 0.46%                    |
| TIAA Traditional Annuity                  |           | 0.580<br>%               | 0.510<br>%               | 0.520<br>%               | 0.550<br>%               | 0.560<br>%               | 0.550<br>%               | 0.510<br>%               | 0.520<br>%               | 0.470<br>%               |

Expense ratios for the Medical Plan (derived from PX0651, PX0672, PX0676, PX0680, PX0684, PX0688, PX0751, PX0747, PX0751, PX0864, PX0902, PX0905, PX0924, PX1614)

| Fund Name                        | Ticker               | 2009<br>Expense<br>Ratio | 2010<br>Expense<br>Ratio | 2011<br>Expense<br>Ratio | 2012<br>Expense<br>Ratio | 2013<br>Expense<br>Ratio | 2014<br>Expense<br>Ratio | 2015<br>Expense<br>Ratio | 2016<br>Expense<br>Ratio | 2017<br>Expense<br>Ratio |
|----------------------------------|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| CREF Bond Market (No class / R3) | None /<br>QCBM<br>IX | 0.455<br>%               | 0.405<br>%               | 0.435<br>%               | 0.445<br>%               | 0.440<br>%               | 0.450<br>%               | 0.370<br>%               | 0.345<br>%               | 0.290<br>%               |
| CREF Equity                      | None /               | 0.420                    | 0.385                    | 0.415                    | 0.425                    | 0.420                    | 0.391                    | 0.290                    | 0.255                    | 0.225                    |

| Fund Name<br>Index (No class /<br>R3)                  | Ticker<br>QCEQI<br>X               | 2009<br>Expen<br>se<br>Ratio<br>% | 2010<br>Expen<br>se<br>Ratio<br>% | 2011<br>Expen<br>se<br>Ratio<br>% | 2012<br>Expen<br>se<br>Ratio<br>% | 2013<br>Expen<br>se<br>Ratio<br>% | 2014<br>Expen<br>se<br>Ratio<br>% | 2015<br>Expen<br>se<br>Ratio<br>% | 2016<br>Expen<br>se<br>Ratio<br>% | 2017<br>Expen<br>se<br>Ratio<br>% |
|--|------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| CREF Global<br>Equities (No class<br>/ R3)             | None /<br>QCGLI<br>X               | 0.510<br>%                        | 0.460<br>%                        | 0.485<br>%                        | 0.515<br>%                        | 0.525<br>%                        | 0.465<br>%                        | 0.375<br>%                        | 0.370<br>%                        | 0.330<br>%                        |
| CREF Growth<br>(No class / R3)                         | None /<br>QCGRI<br>X               | 0.465<br>%                        | 0.430<br>%                        | 0.450<br>%                        | 0.470<br>%                        | 0.460<br>%                        | 0.415<br>%                        | 0.320<br>%                        | 0.310<br>%                        | 0.265<br>%                        |
| CREF Inflation-<br>Linked Bond (No<br>class / R3)      | None /<br>QCILI<br>X               | 0.450<br>%                        | 0.405<br>%                        | 0.435<br>%                        | 0.445<br>%                        | 0.440<br>%                        | 0.405<br>%                        | 0.315<br>%                        | 0.275<br>%                        | 0.240<br>%                        |
| CREF Money<br>Market (No class<br>/ R3)                | None /<br>QCOMM<br>IX              | 0.415<br>%                        | 0.375<br>%                        | 0.420<br>%                        | 0.415<br>%                        | 0.410<br>%                        | 0.395<br>%                        | 0.315<br>%                        | 0.270<br>%                        | 0.230<br>%                        |
| CREF Social<br>Choice (No class<br>/ R3)               | None /<br>QCSCI<br>X               | 0.440<br>%                        | 0.405<br>%                        | 0.430<br>%                        | 0.455<br>%                        | 0.445<br>%                        | 0.405<br>%                        | 0.330<br>%                        | 0.315<br>%                        | 0.265<br>%                        |
| CREF Stock (No<br>class / R3)                          | None /<br>QCSTI<br>X               | 0.485<br>%                        | 0.435<br>%                        | 0.470<br>%                        | 0.485<br>%                        | 0.485<br>%                        | 0.455<br>%                        | 0.370<br>%                        | 0.380<br>%                        | 0.320<br>%                        |
| TIAA Group<br>Supplemental<br>Retirement<br>Annuity    |                                    |                                   |                                   | 0.520<br>%                        | 0.550<br>%                        | 0.560<br>%                        | 0.550<br>%                        | 0.510<br>%                        | 0.520<br>%                        | 0.470<br>%                        |
| TIAA Real Estate                                       | QREA<br>RX                         | 1.010<br>%                        | 1.060<br>%                        | 1.010<br>%                        | 0.920<br>%                        | 0.895<br>%                        | 0.870<br>%                        | 0.865<br>%                        | 0.885<br>%                        | 0.850<br>%                        |
| TIAA Traditional<br>Annuity                            |                                    | 0.580<br>%                        | 0.510<br>%                        | 0.520<br>%                        | 0.550<br>%                        | 0.560<br>%                        | 0.550<br>%                        | 0.510<br>%                        | 0.520<br>%                        | 0.470<br>%                        |
| Vanguard 500<br>Index (Inv /<br>Signal)                | VFINX<br>/<br>VIFSX                | 0.18%                             | 0.18%                             | 0.17%                             | 0.05%                             |                                   |                                   |                                   |                                   |                                   |
| Vanguard<br>Admiral Treasury<br>Money Market<br>(Inv)  | VUSX<br>X                          | 0.12%                             | 0.15%                             | 0.11%                             | 0.10%                             | 0.10%                             | 0.09%                             | 0.09%                             |                                   |                                   |
| Vanguard Asset<br>Allocation (Inv)                     | VAAP<br>X                          | 0.39%                             | 0.27%                             | 0.27%                             |                                   |                                   |                                   |                                   |                                   |                                   |
| Vanguard<br>Balanced Index<br>(Inv / Signal /<br>Inst) | VBINX<br>/<br>VBAS<br>X /<br>VBAIX | 0.25%                             | 0.25%                             | 0.26%                             | 0.10%                             | 0.08%                             | 0.08%                             | 0.08%                             | 0.07%                             | 0.06%                             |

| Fund Name   | Ticker                                  | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|---|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Vanguard Capital<br>Opportunity (Inv /<br>Adm)                          | VHCO<br>X /<br>VHCA<br>X                | 0.52%                        | 0.50%                        | 0.48%                        | 0.41%                        | 0.41%                        | 0.41%                        | 0.40%                        | 0.38%                        | 0.38%                        |
| Vanguard Capital<br>Value (Inv)   | VCVL<br>X                               | 0.52%                        | 0.44%                        | 0.44%                        | 0.58%                        | 0.47%                        | 0.41%                        | 0.47%                        | 0.50%                        |                              |
| Vanguard<br>Convertible<br>Securities (Inv)                             | VCVS<br>X                               | 0.72%                        | 0.72%                        | 0.68%                        | 0.59%                        | 0.52%                        | 0.63%                        | 0.41%                        | 0.38%                        |                              |
| Vanguard<br>Developed<br>Markets Index<br>(Inv / Adm / Inst)            | VDMI<br>X /<br>VDMA<br>X /<br>VTMN<br>X | 0.29%                        | 0.22%                        | 0.22%                        | 0.12%                        | 0.10%                        | 0.09%                        | 0.07%                        | 0.07%                        | 0.06%                        |
| Vanguard<br>Dividend Growth<br>(Inv)                                    | VDIGX                                   | 0.32%                        | 0.38%                        | 0.34%                        | 0.31%                        | 0.29%                        | 0.31%                        | 0.32%                        | 0.33%                        | 0.30%                        |
| Vanguard<br>Emerging<br>Markets Stock<br>Index (Inv /<br>Signal / Inst) | VEIEX<br>/<br>VERS<br>X /<br>VEMI<br>X  | 0.39%                        | 0.40%                        | 0.33%                        | 0.20%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.11%                        |
| Vanguard Equity-<br>Income (Inv /<br>Adm)                               | VEIPX<br>/<br>VEIRX                     | 0.37%                        | 0.36%                        | 0.31%                        | 0.22%                        | 0.21%                        | 0.21%                        | 0.20%                        | 0.17%                        | 0.17%                        |
| Vanguard<br>European Stock<br>Index (Inv /<br>Signal / Adm)             | VEUR<br>X /<br>VESSX<br>/<br>VEUS<br>X  | 0.29%                        | 0.27%                        | 0.26%                        | 0.14%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.10%                        |
| Vanguard<br>Explorer (Inv /<br>Adm)                                     | VEXP<br>X /<br>VEXR<br>X                | 0.51%                        | 0.54%                        | 0.49%                        | 0.34%                        | 0.34%                        | 0.35%                        | 0.36%                        | 0.35%                        | 0.34%                        |
| Vanguard<br>Extended Market<br>Index (Inv /<br>Signal / Adm)            | VEXM<br>X /<br>VEMS<br>X /<br>VEXA      | 0.30%                        | 0.30%                        | 0.30%                        | 0.14%                        | 0.14%                        | 0.10%                        | 0.10%                        | 0.09%                        | 0.08%                        |

| Fund Name  | Ticker<br>X                       | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|--|-----------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Vanguard Federal Money Market (Inv)                        | VMFX<br>X                         | 0.25%                        | 0.29%                        | 0.19%                        | 0.16%                        | 0.16%                        | 0.14%                        | 0.11%                        | 0.11%                        | 0.11%                        |
| Vanguard FTSE Social Index (Inv)                           | VFTSX                             | 0.29%                        | 0.25%                        | 0.29%                        | 0.29%                        | 0.29%                        | 0.28%                        | 0.27%                        | 0.25%                        | 0.22%                        |
| Vanguard Global Equity (Inv)                               | VHGE<br>X                         | 0.58%                        | 0.44%                        | 0.44%                        | 0.54%                        | 0.59%                        | 0.61%                        | 0.61%                        | 0.57%                        | 0.51%                        |
| Vanguard GNMA (Inv / Adm)                                  | VFIIX /<br>VFIJX                  | 0.23%                        | 0.23%                        | 0.23%                        | 0.11%                        | 0.11%                        | 0.11%                        | 0.11%                        | 0.11%                        | 0.11%                        |
| Vanguard Growth & Income (Inv / Adm)                       | VQNP<br>X /<br>VGIAIX             | 0.37%                        | 0.32%                        | 0.34%                        | 0.23%                        | 0.25%                        | 0.26%                        | 0.26%                        | 0.23%                        | 0.23%                        |
| Vanguard Growth Equity (Inv)                               | VGEQ<br>X                         | 0.60%                        | 0.51%                        | 0.51%                        | 0.52%                        | 0.54%                        |                              |                              |                              |                              |
|  | VIGRX<br>/<br>VIGSX               |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard Growth Index (Inv / Signal / Adm / Inst)          | VIGAX<br>/<br>VIGIX               | 0.28%                        | 0.28%                        | 0.26%                        | 0.10%                        | 0.10%                        | 0.09%                        | 0.08%                        | 0.07%                        | 0.05%                        |
| Vanguard High-Yield Corporate (Inv / Adm)                  | VWEH<br>X<br>VWEA<br>X            | 0.32%                        | 0.28%                        | 0.25%                        | 0.13%                        | 0.13%                        | 0.13%                        | 0.13%                        | 0.13%                        | 0.13%                        |
| Vanguard Inflation-Protected Securities (Inv / Adm / Inst) | VIPSX<br>/<br>VAIPX<br>/ VIPIX    | 0.25%                        | 0.25%                        | 0.22%                        | 0.11%                        | 0.07%                        | 0.07%                        | 0.07%                        | 0.07%                        | 0.07%                        |
| Vanguard Institutional Index (Inst)                        | VINIX                             |                              |                              |                              |                              | 0.04%                        | 0.04%                        | 0.04%                        | 0.04%                        | 0.04%                        |
| Vanguard Intermediate-Term Bond Index (Inv / Signal / Adm) | VBIIX<br>/<br>VIBSX<br>/<br>VBILX | 0.22%                        | 0.22%                        | 0.22%                        | 0.11%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.09%                        | 0.07%                        |
| Vanguard Intermediate-Term Investment-                     | VFICX<br>/<br>VFIDX               | 0.26%                        | 0.24%                        | 0.22%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        |

| Fund Name<br>Grade (Inv /<br>Adm)                          | Ticker                   | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|--|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Vanguard<br>Intermediate-<br>Term Treasury<br>(Inv / Adm)  | VFITX<br>/<br>VFIUX      | 0.25%                        | 0.25%                        | 0.22%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        |
| Vanguard<br>International<br>Explorer (Inv)                | VINEX                    | 0.42%                        | 0.45%                        | 0.39%                        | 0.42%                        | 0.43%                        | 0.36%                        | 0.40%                        | 0.42%                        | 0.41%                        |
| Vanguard<br>International<br>Growth (Inv /<br>Adm)         | VWIG<br>X /<br>VWIL<br>X | 0.53%                        | 0.53%                        | 0.47%                        | 0.34%                        | 0.36%                        | 0.35%                        | 0.34%                        | 0.34%                        | 0.33%                        |
| Vanguard<br>International<br>Value (Inv)                   | VTRIX                    | 0.47%                        | 0.45%                        | 0.39%                        | 0.41%                        | 0.41%                        | 0.43%                        | 0.44%                        | 0.46%                        | 0.43%                        |
| Vanguard<br>LifeStrategy<br>Conservative<br>Growth (Inv)   | VSCG<br>X                | 0.22%                        | 0.24%                        | 0.15%                        | 0.15%                        | 0.15%                        | 0.15%                        | 0.15%                        | 0.13%                        | 0.13%                        |
| Vanguard<br>LifeStrategy<br>Growth (Inv)                   | VASG<br>X                | 0.21%                        | 0.23%                        | 0.17%                        | 0.17%                        | 0.17%                        | 0.17%                        | 0.17%                        | 0.15%                        | 0.15%                        |
| Vanguard<br>LifeStrategy<br>Income (Inv)                   | VASIX                    | 0.22%                        | 0.23%                        | 0.13%                        | 0.13%                        | 0.14%                        | 0.14%                        | 0.14%                        | 0.12%                        | 0.12%                        |
| Vanguard<br>LifeStrategy<br>Moderate Growth<br>(Inv)       | VSMG<br>X                | 0.22%                        | 0.23%                        | 0.16%                        | 0.16%                        | 0.16%                        | 0.16%                        | 0.16%                        | 0.14%                        | 0.14%                        |
| Vanguard Long-<br>Term Bond Index<br>(Inv)                 | VBLT<br>X                | 0.22%                        | 0.22%                        | 0.22%                        | 0.22%                        | 0.20%                        | 0.20%                        | 0.20%                        | 0.16%                        | 0.15%                        |
| Vanguard Long-<br>Term Investment-<br>Grade (Inv /<br>Adm) | VWES<br>X /<br>VWET<br>X | 0.28%                        | 0.26%                        | 0.24%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.11%                        |
| Vanguard Long-<br>Term Treasury<br>(Inv)                   | VUST<br>X                | 0.25%                        | 0.25%                        | 0.22%                        | 0.20%                        | 0.20%                        | 0.20%                        | 0.20%                        | 0.20%                        | 0.20%                        |
| Vanguard Mid<br>Cap Growth (Inv)                           | VMGR<br>X                | 0.61%                        | 0.60%                        | 0.51%                        | 0.53%                        | 0.54%                        | 0.51%                        | 0.46%                        | 0.43%                        | 0.36%                        |

| Fund Name   | Ticker                                  | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|---|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Vanguard Mid-Cap Index (Inv / Signal / Inst)        | VMSX<br>/<br>VMISX<br>/<br>VMCI<br>X    | 0.27%                        | 0.27%                        | 0.26%                        | 0.10%                        | 0.08%                        | 0.08%                        | 0.08%                        | 0.07%                        | 0.05%                        |
| Vanguard Morgan Growth (Inv / Adm)                  | VMRG<br>X /<br>VMRA<br>X                | 0.46%                        | 0.48%                        | 0.44%                        | 0.28%                        | 0.26%                        | 0.25%                        | 0.26%                        | 0.27%                        | 0.28%                        |
| Vanguard Pacific Stock Index (Inv / Signal / Adm)   | VPAC<br>X /<br>VPAS<br>X /<br>VPAD<br>X | 0.29%                        | 0.27%                        | 0.26%                        | 0.14%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.10%                        |
| Vanguard Prime Money Market (Inv / Adm)             | VMMX<br>X /<br>VMRX<br>X                | 0.25%                        | 0.25%                        | 0.20%                        | 0.16%                        | 0.09%                        | 0.10%                        | 0.10%                        |                              |                              |
| Vanguard PRIMECAP (Inv / Adm)                       | VPMC<br>X /<br>VPMA<br>X                | 0.50%                        | 0.49%                        | 0.45%                        | 0.36%                        | 0.36%                        | 0.36%                        | 0.35%                        | 0.34%                        | 0.33%                        |
| Vanguard REIT Index (Inv / Signal / Inst)           | VGSIX<br>/<br>VGRS<br>X /<br>VGSN<br>X  | 0.26%                        | 0.26%                        | 0.26%                        | 0.10%                        | 0.08%                        | 0.08%                        | 0.10%                        | 0.10%                        | 0.10%                        |
| Vanguard Selected Value (Inv)                       | VASV<br>X                               | 0.45%                        | 0.52%                        | 0.47%                        | 0.45%                        | 0.38%                        | 0.44%                        | 0.44%                        | 0.39%                        | 0.35%                        |
| Vanguard Short-Term Bond Index (Inv / Signal / Adm) | VBISX<br>/<br>VBSSX<br>/<br>VBIRX       | 0.22%                        | 0.22%                        | 0.22%                        | 0.11%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.09%                        | 0.07%                        |
| Vanguard Short-Term Federal (Inv / Adm)             | VSGB<br>X /<br>VSGD<br>X                | 0.22%                        | 0.22%                        | 0.22%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        |

| Fund Name   | Ticker                             | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|---|------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Vanguard Short-Term Investment-Grade (Inv / Adm / Inst) | VFSTX<br>/<br>VFSU<br>X /<br>VFSIX | 0.26%                        | 0.24%                        | 0.22%                        | 0.11%                        | 0.07%                        | 0.07%                        | 0.07%                        | 0.07%                        | 0.07%                        |
| Vanguard Short-Term Treasury (Inv / Adm)                | VFISX<br>/<br>VFIRX                | 0.22%                        | 0.22%                        | 0.22%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        | 0.10%                        |
| Vanguard Small Cap Growth Index (Inv / Adm / Inst)      | VISGX<br>/<br>VSGA<br>X /<br>VSGIX | 0.28%                        | 0.28%                        | 0.26%                        | 0.10%                        | 0.10%                        | 0.08%                        | 0.08%                        | 0.07%                        | 0.06%                        |
| Vanguard Small Cap Index (Inv / Signal / Inst)          | NAES<br>X /<br>VSISX<br>/<br>VSCIX | 0.28%                        | 0.28%                        | 0.31%                        | 0.16%                        | 0.08%                        | 0.08%                        | 0.08%                        | 0.07%                        | 0.05%                        |
| Vanguard Small Cap Value Index (Inv / Adm / Inst)       | VISVX<br>/<br>VSIAX<br>/ VSIIX     | 0.28%                        | 0.28%                        | 0.37%                        | 0.21%                        | 0.10%                        | 0.08%                        | 0.08%                        | 0.07%                        | 0.06%                        |
| Vanguard STAR (Inv)                                     | VGST<br>X                          | 0.32%                        | 0.37%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.34%                        | 0.32%                        |
| Vanguard Strategic Equity (Inv)                         | VSEQ<br>X                          | 0.32%                        | 0.30%                        | 0.31%                        | 0.33%                        | 0.29%                        | 0.29%                        | 0.27%                        | 0.21%                        | 0.18%                        |
| Vanguard Target Retirement 2005 (Inv)                   | VTOV<br>X                          | 0.18%                        | 0.18%                        | 0.17%                        |                              |                              |                              |                              |                              |                              |
| Vanguard Target Retirement 2010 (Inv / Inst)            | VTEN<br>X /<br>VIRTX               |                              | 0.17%                        | 0.17%                        | 0.17%                        | 0.16%                        | 0.16%                        | 0.10%                        | 0.10%                        | 0.13%                        |
| Vanguard Target Retirement 2015 (Inv / Inst)            | VTXV<br>X /<br>VITVX               | 0.18%                        | 0.17%                        | 0.16%                        | 0.17%                        | 0.16%                        | 0.16%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2020 (Inv / Inst)            | VTWN<br>X /<br>VITW<br>X           | 0.19%                        | 0.18%                        | 0.17%                        | 0.17%                        | 0.16%                        | 0.16%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2025                         | VTTV<br>X /                        | 0.18%                        | 0.19%                        | 0.18%                        | 0.18%                        | 0.17%                        | 0.17%                        | 0.10%                        | 0.10%                        | 0.09%                        |



| Fund Name<br>(Inv / Inst)                                      | Ticker<br>VRIVX                         | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|--|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Vanguard Target Retirement 2030<br>(Inv / Inst)                | VTHR<br>X /<br>VTTW<br>X                |                              | 0.19%                        | 0.18%                        | 0.18%                        | 0.17%                        | 0.17%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2035<br>(Inv / Inst)                | VTTH<br>X /<br>VITFX                    | 0.18%                        | 0.20%                        | 0.19%                        | 0.19%                        | 0.18%                        | 0.18%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2040<br>(Inv / Inst)                | VFOR<br>X /<br>VIRSX                    | 0.19%                        | 0.20%                        | 0.19%                        | 0.19%                        | 0.18%                        | 0.18%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2045<br>(Inv / Inst)                | VTIVX<br>/<br>VITLX                     | 0.18%                        | 0.20%                        | 0.19%                        | 0.19%                        | 0.18%                        | 0.18%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2050<br>(Inv / Inst)                | VFIFX<br>/<br>VTRL<br>X                 |                              | 0.20%                        | 0.19%                        | 0.19%                        | 0.18%                        | 0.18%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2055<br>(Inv / Inst)                | VFFV<br>X /<br>VIVLX                    |                              |                              | 0.19%                        | 0.19%                        | 0.18%                        | 0.18%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement 2060<br>(Inv / Inst)                | VTTSX<br>/<br>VILVX                     |                              |                              |                              | 0.17%                        | 0.18%                        | 0.18%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Target Retirement Income (Inv / Inst)                 | VTINX<br>/<br>VITRX                     | 0.19%                        | 0.18%                        | 0.17%                        | 0.17%                        | 0.16%                        | 0.16%                        | 0.10%                        | 0.10%                        | 0.09%                        |
| Vanguard Total Bond Market Index (Inv / Signal / Inst)         | VBMF<br>X /<br>VBTS<br>X /<br>VBTIX     | 0.22%                        | 0.22%                        | 0.22%                        | 0.10%                        | 0.07%                        | 0.07%                        | 0.06%                        | 0.05%                        | 0.04%                        |
| Vanguard Total International Stock Index (Inv / Signal / Inst) | VGTS<br>X /<br>VTSG<br>X /<br>VTSN<br>X | 0.34%                        | 0.32%                        | 0.26%                        | 0.18%                        | 0.12%                        | 0.12%                        | 0.12%                        | 0.10%                        | 0.09%                        |
| Vanguard Total Stock Market Index (Inv /                       | VTSM<br>X /<br>VTSSX                    | 0.18%                        | 0.18%                        | 0.18%                        | 0.06%                        | 0.04%                        | 0.04%                        | 0.04%                        | 0.04%                        | 0.035%                       |

| Fund Name<br>Signal / Inst)                     | Ticker<br>/ | 2009<br>Expen<br>se<br>Ratio | 2010<br>Expen<br>se<br>Ratio | 2011<br>Expen<br>se<br>Ratio | 2012<br>Expen<br>se<br>Ratio | 2013<br>Expen<br>se<br>Ratio | 2014<br>Expen<br>se<br>Ratio | 2015<br>Expen<br>se<br>Ratio | 2016<br>Expen<br>se<br>Ratio | 2017<br>Expen<br>se<br>Ratio |
|---|-------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|   | VITSX       |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | VWUS        |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard U.S.<br>Growth (Inv /<br>Adm)          | X /<br>VWUA |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | X           | 0.49%                        | 0.53%                        | 0.44%                        | 0.30%                        | 0.31%                        | 0.31%                        | 0.30%                        | 0.33%                        | 0.32%                        |
| Vanguard U.S.<br>Value (Inv)                    | VUVL        |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | X           | 0.46%                        | 0.41%                        | 0.29%                        | 0.31%                        | 0.29%                        | 0.30%                        | 0.29%                        | 0.26%                        | 0.23%                        |
|   | VIVAX       |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | /           |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard Value<br>Index (Inv /<br>Signal / Adm) | VVISX       |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | /           |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | VVIAX       | 0.26%                        | 0.26%                        | 0.26%                        | 0.10%                        | 0.10%                        | 0.09%                        | 0.09%                        | 0.08%                        | 0.06%                        |
|   | VWIN        |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard<br>Wellesley Income<br>(Inv / Adm)     | X /<br>VWIA |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | X           | 0.33%                        | 0.31%                        | 0.28%                        | 0.18%                        | 0.18%                        | 0.18%                        | 0.18%                        | 0.16%                        | 0.15%                        |
|   | VWEL        |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard<br>Wellington (Inv /<br>Adm)           | X /<br>VWEN |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | X           | 0.35%                        | 0.34%                        | 0.30%                        | 0.19%                        | 0.17%                        | 0.18%                        | 0.18%                        | 0.18%                        | 0.16%                        |
|   | VWND        |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard<br>Windsor (Inv /<br>Adm)              | X /<br>VWNE |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | X           | 0.37%                        | 0.33%                        | 0.33%                        | 0.31%                        | 0.31%                        | 0.27%                        | 0.28%                        | 0.29%                        | 0.20%                        |
|   | VWNF        |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Vanguard<br>Windsor II (Inv /<br>Adm)           | X /<br>VWNA |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|   | X           | 0.39%                        | 0.38%                        | 0.35%                        | 0.27%                        | 0.27%                        | 0.28%                        | 0.28%                        | 0.26%                        | 0.25%                        |

Plan Services Expense Credit for the Faculty Plan (derived from PX0755, PX1614, PX0692, PX0696, PX0902, PX0700, PX0456, PX0704, PX0709, PX0 PX0456, PX0718, PX0497, PX0862, PX0918, PX0905)

| Fund Name                              | Ticker               | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| CREF Bond<br>Market (No class<br>/ R3) | None /<br>QCBM<br>IX | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |

| Fund Name  | Ticker         | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|----------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| CREF Equity Index (No class / R3)                    | None / QCEQIX  | 0.360 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.100 %                            | 0.100 %                            | 0.100 %                            |
| CREF Global Equities (No class / R3)                 | None / QCGLIX  | 0.360 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.100 %                            | 0.100 %                            | 0.100 %                            |
| CREF Growth (No class / R3)                          | None / QCGRIX  | 0.360 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.100 %                            | 0.100 %                            | 0.100 %                            |
| CREF Inflation-Linked Bond (No class / R3)           | None / QCILIX  | 0.360 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.100 %                            | 0.100 %                            | 0.100 %                            |
| CREF Money Market (No class / R3)                    | None / QCMMIX  | 0.360 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.100 %                            | 0.100 %                            | 0.100 %                            |
| CREF Social Choice (No class / R3)                   | None / QCSCI X | 0.360 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.100 %                            | 0.100 %                            | 0.100 %                            |
| CREF Stock (No class / R3)                           | None / QCSTIX  | 0.360 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.100 %                            | 0.100 %                            | 0.100 %                            |
| TIAA Real Estate                                     | QREA RX        | 0.450 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            | 0.240 %                            |
| TIAA Traditional Annuity                             |                | 0.430 %                            | 0.150 %                            | 0.150 %                            | 0.150 %                            | 0.150 %                            | 0.150 %                            | 0.150 %                            | 0.150 %                            | 0.150 %                            |
| TIAA-CREF International Equity Index (Retire / Inst) | TRIEX / TCIEIX | 0.250 %                            | 0.250 %                            | 0.250 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            |
| TIAA-CREF Large-Cap Value Index (Retire / Inst)      | TRCV X / VILVX | 0.250 %                            | 0.250 %                            | 0.250 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            |
| TIAA-CREF Lifecycle 2010 (Retire / Inst)             | TCLEX / TCTIX  | 0.250 %                            | 0.250 %                            | 0.250 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            |
| TIAA-CREF Lifecycle 2015 (Retire / Inst)             | TCLIX / TCNIX  | 0.250 %                            | 0.250 %                            | 0.250 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            |
| TIAA-CREF Lifecycle 2020                             | TCLTX /        | 0.250 %                            | 0.250 %                            | 0.250 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            | 0.000 %                            |

| Fund Name   | Ticker                   | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|--------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| (Retire / Inst)   | TCWI<br>X                |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| TIAA-CREF<br>Lifecycle 2025<br>(Retire / Inst)                    | TCLFX<br>/<br>TCYIX      | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle 2030<br>(Retire / Inst)                    | TCLN<br>X /<br>TCRIX     | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle 2035<br>(Retire / Inst)                    | TCLR<br>X /<br>TCIIX     | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle 2040<br>(Retire / Inst)                    | TCLO<br>X /<br>TCOIX     | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle 2045<br>(Retire / Inst)                    | TTFRX<br>/<br>TTFIX      | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle 2050<br>(Retire / Inst)                    | TLFRX<br>/<br>TFTIX      | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle 2055<br>(Inst)                             | TTRIX                    |                                    |                                    |                                    | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle 2060<br>(Inst)                             | TLXN<br>X                |                                    |                                    |                                    |                                    |                                    |                                    |                                    | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Lifecycle<br>Retirement<br>Income (Retire /<br>Inst) | TLIRX<br>/<br>TLRIX      | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Mid-Cap Growth<br>(Retire / Inst)                    | TRGM<br>X /<br>TRPW<br>X | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Mid-Cap Value<br>(Retire / Inst)                     | TRVR<br>X /<br>TIMV<br>X | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |
| TIAA-CREF<br>Small-Cap Blend                                      | TRBIX<br>/               | 0.250<br>%                         | 0.250<br>%                         | 0.250<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         | 0.000<br>%                         |

| Fund Name   | Ticker               | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Index (Retire /<br>Inst)                              | TISBX                |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard 500<br>Index (Inv)                           | VFINX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              |                                    |                                    |                                    |                                    |
| Vanguard<br>Admiral Treasury<br>Money Market<br>(Inv) | VUSX<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              |                                    |                                    |
| Vanguard Asset<br>Allocation (Inv)                    | VAAP<br>X            | 0.10%                              | 0.10%                              | 0.10%                              |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard<br>Balanced Index<br>(Inv)                   | VBINX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.12%                              |
| Vanguard Capital<br>Opportunity (Inv)                 | VHCO<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.07%                              | 0.07%                              |
| Vanguard Capital<br>Value (Inv)                       | VCVL<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              |                                    |
| Vanguard<br>Convertible<br>Securities (Inv)           | VCVS<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              |                                    |
| Vanguard<br>Developed<br>Markets Index<br>(Inv / Inv) | VDMI<br>X /<br>VDVIX | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.11%                              | 0.10%                              |
| Vanguard<br>Dividend Growth<br>(Inv)                  | VDIGX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Emerging<br>Markets Stock<br>Index (Inv)  | VEIEX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.18%                              | 0.18%                              |
| Vanguard Energy<br>(Inv)                              | VGEM<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.06%                              | 0.08%                              |
| Vanguard Equity-<br>Income (Inv)                      | VEIPX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.09%                              |
| Vanguard<br>European Stock<br>Index (Inv)             | VEUR<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.16%                              |
| Vanguard<br>Explorer (Inv)                            | VEXP<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.12%                              |
| Vanguard  | VEXM                 | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.13%                              | 0.13%                              |

| Fund Name   | Ticker    | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|-----------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Extended Market Index (Inv)                       | X         |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard Federal Money Market (Inv)               | VMFX<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard FTSE Social Index (Inv)                  | VFTSX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard Global Equity (Inv)                      | VHGE<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard GNMA (Inv)                               | VFIIX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Growth & Income (Inv)                    | VQNP<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.11%                              | 0.11%                              |
| Vanguard Growth Equity (Inv)                      | VGEQ<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              |                                    |                                    |                                    |                                    |
| Vanguard Growth Index (Inv)                       | VIGRX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.12%                              |
| Vanguard Health Care (Inv)                        | VGHC<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.05%                              | 0.05%                              |
| Vanguard High-Yield Corporate (Inv)               | VWEH<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Inflation-Protected Securities (Inv)     | VIPSX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Institutional Index (Inst)               | VINIX     |                                    |                                    |                                    |                                    |                                    | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Intermediate-Term Bond Index (Inv)       | VBIIX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.07%                              | 0.08%                              |
| Vanguard Intermediate-Term Investment-Grade (Inv) | VFICX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Intermediate-Term Treasury (Inv)         | VFITX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |

| Fund Name                                       | Ticker    | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|-----------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Vanguard International Explorer (Inv)           | VINEX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard International Growth (Inv)             | VWIG<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.13%                              | 0.13%                              |
| Vanguard International Value (Inv)              | VTRIX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard LifeStrategy Conservative Growth (Inv) | VSCG<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard LifeStrategy Growth (Inv)              | VASG<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard LifeStrategy Income (Inv)              | VASIX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard LifeStrategy Moderate Growth (Inv)     | VSMG<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard Long-Term Bond Index (Inv)             | VBLT<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard Long-Term Investment-Grade (Inv)       | VWES<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.11%                              |
| Vanguard Long-Term Treasury (Inv)               | VUST<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Mid Cap Growth (Inv)                   | VMGR<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard Mid-Cap Index (Inv)                    | VIMSX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.12%                              | 0.12%                              |
| Vanguard Morgan Growth (Inv)                    | VMRG<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.13%                              | 0.10%                              |
| Vanguard Pacific Stock Index (Inv)              | VPAC<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.16%                              |

| Fund Name  | Ticker    | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|-----------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Vanguard<br>Precious Metals<br>and Mining (Inv)    | VGPM<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              |                                    |                                    |
| Vanguard Prime<br>Money Market<br>(Inv)            | VMMX<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              |                                    |                                    |
| Vanguard<br>PRIMECAP (Inv)                         | VPMC<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.06%                              | 0.06%                              |
| Vanguard<br>PRIMECAP Core<br>(Inv)                 | VPCC<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard REIT<br>Index (Inv)                       | VGSIX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.14%                              |
| Vanguard<br>Selected Value<br>(Inv)                | VASV<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard Short-<br>Term Bond Index<br>(Inv)        | VBISX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.07%                              | 0.08%                              |
| Vanguard Short-<br>Term Federal<br>(Inv)           | VSGB<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Short-<br>Term Investment-<br>Grade (Inv) | VFSTX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Short-<br>Term Treasury<br>(Inv)          | VFISX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard Small<br>Cap Growth<br>Index (Inv)        | VISGX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.12%                              | 0.12%                              |
| Vanguard Small<br>Cap Index (Inv)                  | NAES<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.12%                              | 0.12%                              |
| Vanguard Small<br>Cap Value Index<br>(Inv)         | VISVX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.12%                              | 0.12%                              |
| Vanguard STAR<br>(Inv)                             | VGST<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Strategic Equity<br>(Inv)              | VSEQ<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |



| Fund Name                               | Ticker    | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|-----------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Vanguard Target Retirement 2005 (Inv)   | VTOV<br>X | 0.10%                              | 0.10%                              | 0.10%                              |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard Target Retirement 2010 (Inv)   | VTEN<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.04%                              | 0.04%                              |
| Vanguard Target Retirement 2015 (Inv)   | VTXV<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.04%                              | 0.05%                              |
| Vanguard Target Retirement 2020 (Inv)   | VTWN<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.04%                              | 0.04%                              |
| Vanguard Target Retirement 2025 (Inv)   | VTTV<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.05%                              | 0.04%                              |
| Vanguard Target Retirement 2030 (Inv)   | VTNR<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.05%                              | 0.05%                              |
| Vanguard Target Retirement 2035 (Inv)   | VTTH<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.05%                              | 0.05%                              |
| Vanguard Target Retirement 2040 (Inv)   | VFOR<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.06%                              | 0.06%                              |
| Vanguard Target Retirement 2045 (Inv)   | VTIVX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.06%                              | 0.06%                              |
| Vanguard Target Retirement 2050 (Inv)   | VFIFX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.06%                              | 0.06%                              |
| Vanguard Target Retirement 2055 (Inv)   | VFFV<br>X |                                    | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.06%                              | 0.06%                              |
| Vanguard Target Retirement 2060 (Inv)   | VTTX      |                                    |                                    |                                    | 0.09%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.06%                              | 0.06%                              |
| Vanguard Target Retirement Income (Inv) | VTINX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.04%                              | 0.04%                              |
| Vanguard Total Bond Market              | VBMF<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |

| Fund Name  | Ticker               | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Index (Inv)  |                      |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard Total<br>International<br>Stock Index (Inv) | VGTS<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.07%                              | 0.07%                              |
| Vanguard Total<br>Stock Market<br>Index (Inv / Inst) | VTSM<br>X /<br>VITSX | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard U.S.<br>Growth (Inv)                        | VWUS<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.14%                              |
| Vanguard U.S.<br>Value (Inv)                         | VUVL<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.00%                              | 0.00%                              |
| Vanguard Value<br>Index (Inv)                        | VIVAX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.14%                              | 0.12%                              |
| Vanguard<br>Wellesley Income<br>(Inv)                | VWIN<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.07%                              | 0.07%                              |
| Vanguard<br>Wellington (Inv)                         | VWEL<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.08%                              | 0.09%                              |
| Vanguard<br>Windsor (Inv)                            | VWND<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.10%                              | 0.10%                              |
| Vanguard<br>Windsor II (Inv)                         | VWNF<br>X            | 0.10%                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.09%                              | 0.09%                              | 0.09%                              | 0.08%                              | 0.08%                              |

Plan Services Expense Credit for the Medical Plan (derived from PX0751, PX0759,  
PX0672, PX0676, PX0680, PX0684, PX0688, PX864, PX0902, PX1614)

| Fund Name                                  | Ticker               | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| CREF Bond<br>Market (No class<br>/ R3)     | None /<br>QCBM<br>IX | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |
| CREF Equity<br>Index (No class /<br>R3)    | None /<br>QCEQI<br>X | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |
| CREF Global<br>Equities (No class<br>/ R3) | None /<br>QCGLI<br>X | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |
| CREF Growth                                | None /               | 0.360                              | 0.240                              | 0.240                              | 0.240                              | 0.240                              | 0.240                              | 0.100                              | 0.100                              | 0.100                              |

| Fund Name  | Ticker                             | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| (No class / R3)  | QCGRI<br>X                         | %                                  | %                                  | %                                  | %                                  | %                                  | %                                  | %                                  | %                                  | %                                  |
| CREF Inflation-<br>Linked Bond (No<br>class / R3)      | None /<br>QCILI<br>X               | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |
| CREF Money<br>Market (No class<br>/ R3)                | None /<br>QCMX<br>IX               | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |
| CREF Social<br>Choice (No class<br>/ R3)               | None /<br>QCSCI<br>X               | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |
| CREF Stock (No<br>class / R3)                          | None /<br>QCSTI<br>X               | 0.360<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.100<br>%                         | 0.100<br>%                         | 0.100<br>%                         |
| TIAA Group<br>Supplemental<br>Retirement<br>Annuity    |                                    |                                    |                                    | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         |
| TIAA Real Estate                                       | QREA<br>RX                         | 0.450<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         | 0.240<br>%                         |
| TIAA Traditional<br>Annuity                            |                                    | 0.430<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         | 0.150<br>%                         |
| Vanguard 500<br>Index (Inv /<br>Signal)                | VFINX<br>/<br>VIFSX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              |                                    |                                    |                                    |                                    |                                    |
| Vanguard<br>Admiral Treasury<br>Money Market<br>(Inv)  | VUSX<br>X                          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |                                    |                                    |
| Vanguard Asset<br>Allocation (Inv)                     | VAAP<br>X                          | 0.10%                              | 0.10%                              | 0.10%                              |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard<br>Balanced Index<br>(Inv / Signal /<br>Inst) | VBINX<br>/<br>VBAS<br>X /<br>VBAIX | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Capital<br>Opportunity (Inv /<br>Adm)         | VHCO<br>X /<br>VHCA<br>X           | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Capital                                       | VCVL                               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |                                    |

| Fund Name   | Ticker                                  | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Value (Inv)   | X                                       |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard<br>Convertible<br>Securities (Inv)                             | VCVS<br>X                               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |                                    |
| Vanguard<br>Developed<br>Markets Index<br>(Inv / Adm / Inst)            | VDMI<br>X /<br>VDMA<br>X /<br>VTMN<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Dividend Growth<br>(Inv)                                    | VDIGX                                   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Emerging<br>Markets Stock<br>Index (Inv /<br>Signal / Inst) | VEIEX<br>/<br>VERS<br>X /<br>VEMI<br>X  | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Equity-<br>Income (Inv /<br>Adm)                               | VEIPX<br>/<br>VEIRX                     | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>European Stock<br>Index (Inv /<br>Signal / Adm)             | VEUR<br>X /<br>VESSX<br>/<br>VEUS<br>X  | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Explorer (Inv /<br>Adm)                                     | VEXP<br>X /<br>VEXR<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Extended Market<br>Index (Inv /<br>Signal / Adm)            | VEXM<br>X /<br>VEMS<br>X /<br>VEXA<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Federal<br>Money Market<br>(Inv)                               | VMFX<br>X                               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |

| Fund Name   | Ticker                             | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Vanguard FTSE<br>Social Index (Inv)                                     | VFTSX                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Global<br>Equity (Inv)   | VHGE<br>X                          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard GNMA<br>(Inv / Adm)  | VFIIX /<br>VFIJX                   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Growth<br>& Income (Inv /<br>Adm)                              | VQNP<br>X /<br>VGIAX               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Growth<br>Equity (Inv)   | VGEQ<br>X                          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              |                                    |                                    |                                    |                                    |
|   | VIGRX<br>/<br>VIGSX                |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard Growth<br>Index (Inv /<br>Signal / Adm /<br>Inst)              | VIGAX<br>/<br>VIGIX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard High-<br>Yield Corporate<br>(Inv / Adm)                        | VWEH<br>X<br>VWEA<br>X             | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Inflation-<br>Protected<br>Securities (Inv /<br>Adm / Inst) | VIPSX<br>/<br>VAIPX<br>/ VIPIX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Institutional<br>Index (Inst)                               | VINIX                              |                                    |                                    |                                    |                                    | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Intermediate-<br>Term Bond Index<br>(Inv / Signal /<br>Adm) | VBIIIX<br>/<br>VIBSX<br>/<br>VBILX | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Intermediate-<br>Term Investment-<br>Grade (Inv /<br>Adm)   | VFICX<br>/<br>VFIDX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard  | VFITX                              | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |

| Fund Name  | Ticker                   | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|--------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Intermediate-<br>Term Treasury<br>(Inv / Adm)              | /<br>VFIUX               |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard<br>International<br>Explorer (Inv)                | VINEX                    | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>International<br>Growth (Inv /<br>Adm)         | VWIG<br>X /<br>VWIL<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>International<br>Value (Inv)                   | VTRIX                    | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>LifeStrategy<br>Conservative<br>Growth (Inv)   | VSCG<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>LifeStrategy<br>Growth (Inv)                   | VASG<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>LifeStrategy<br>Income (Inv)                   | VASIX                    | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>LifeStrategy<br>Moderate Growth<br>(Inv)       | VSMG<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Long-<br>Term Bond Index<br>(Inv)                 | VBLT<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Long-<br>Term Investment-<br>Grade (Inv /<br>Adm) | VWES<br>X /<br>VWET<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Long-<br>Term Treasury<br>(Inv)                   | VUST<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Mid<br>Cap Growth (Inv)                           | VMGR<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Mid-<br>Cap Index (Inv /                          | VIMSX<br>/               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |

| Fund Name   | Ticker                                  | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Signal / Inst)  | VMISX<br>/<br>VMCI<br>X                 |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard<br>Morgan Growth<br>(Inv / Adm)                      | VMRG<br>X /<br>VMRA<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Pacific<br>Stock Index (Inv /<br>Signal / Adm)       | VPAC<br>X /<br>VPAS<br>X /<br>VPAD<br>X | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Prime<br>Money Market<br>(Inv / Adm)                 | VMMX<br>X /<br>VMRX<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |                                    |                                    |
| Vanguard<br>PRIMECAP (Inv<br>/ Adm)                           | VPMC<br>X /<br>VPMA<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard REIT<br>Index (Inv /<br>Signal / Inst)               | VGSIX<br>/<br>VGRS<br>X /<br>VGSN<br>X  | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Selected Value<br>(Inv)                           | VASV<br>X                               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Short-<br>Term Bond Index<br>(Inv / Signal /<br>Adm) | VBISX<br>/<br>VBSSX<br>/<br>VBIRX       | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Short-<br>Term Federal (Inv<br>/ Adm)                | VSGB<br>X /<br>VSGD<br>X                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Short-   | VFSTX                                   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |

| Fund Name   | Ticker                             | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Term Investment-<br>Grade (Inv / Adm<br>/ Inst)             | /<br>VFSU<br>X /<br>VFSIX          |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard Short-<br>Term Treasury<br>(Inv / Adm)             | VFISX<br>/<br>VFIRX                | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Small<br>Cap Growth<br>Index (Inv / Adm<br>/ Inst) | VISGX<br>/<br>VSGA<br>X /<br>VSGIX | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Small<br>Cap Index (Inv /<br>Signal / Inst)        | NAES<br>X /<br>VSISX<br>/<br>VSCIX | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Small<br>Cap Value Index<br>(Inv / Adm / Inst)     | VISVX<br>/<br>VSIAX<br>/ VSIIX     | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard STAR<br>(Inv)                                      | VGST<br>X                          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Strategic Equity<br>(Inv)                       | VSEQ<br>X                          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target<br>Retirement 2005<br>(Inv)                 | VTOV<br>X                          | 0.10%                              | 0.10%                              | 0.10%                              |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard Target<br>Retirement 2010<br>(Inv / Inst)          | VTEN<br>X /<br>VIRTX               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target<br>Retirement 2015<br>(Inv / Inst)          | VTXV<br>X /<br>VITVX               | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target<br>Retirement 2020<br>(Inv / Inst)          | VTWN<br>X /<br>VITW<br>X           | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target<br>Retirement 2025                          | VTTV<br>X /                        | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |



| Fund Name  | Ticker                                  | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|--|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| (Inv / Inst)   | VRIVX                                   |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard Target Retirement 2030 (Inv / Inst)                   | VTTH<br>X /<br>VTTW<br>X                |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target Retirement 2035 (Inv / Inst)                   | VTTH<br>X /<br>VITFX                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target Retirement 2040 (Inv / Inst)                   | VFOR<br>X /<br>VIRSX                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target Retirement 2045 (Inv / Inst)                   | VTIVX<br>/<br>VITLX                     |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target Retirement 2050 (Inv / Inst)                   | VFIFX<br>/<br>VTRL<br>X                 |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target Retirement 2055 (Inv / Inst)                   | VFFV<br>X /<br>VIVLX                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target Retirement 2060 (Inv / Inst)                   | VTTSX<br>/<br>VILVX                     |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   |                                    |                                    |                                    | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Target Retirement Income (Inv / Inst)                 | VTINX<br>/<br>VITRX                     |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Total Bond Market Index (Inv / Signal / Inst)         | VBMF<br>X /<br>VBTS<br>X /<br>VBTIX     |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Total International Stock Index (Inv / Signal / Inst) | VGTS<br>X /<br>VTSG<br>X /<br>VTSN<br>X |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Total Stock Market                                    | VTSM<br>X /                             |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    | 0.000<br>%                         |
|  |   | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |                                    |

| Fund Name                                       | Ticker                            | 2009<br>Reven<br>ue<br>Sharin<br>g | 2010<br>Reven<br>ue<br>Sharin<br>g | 2011<br>Reven<br>ue<br>Sharin<br>g | 2012<br>Reven<br>ue<br>Sharin<br>g | 2013<br>Reven<br>ue<br>Sharin<br>g | 2014<br>Reven<br>ue<br>Sharin<br>g | 2015<br>Reven<br>ue<br>Sharin<br>g | 2016<br>Reven<br>ue<br>Sharin<br>g | 2017<br>Reven<br>ue<br>Sharin<br>g |
|---|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Index (Inv /<br>Signal / Inst)                  | VTSSX<br>/<br>VITSX               |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
| Vanguard U.S.<br>Growth (Inv /<br>Adm)          | VWUS<br>X /<br>VWUA<br>X          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard U.S.<br>Value (Inv)                    | VUVL<br>X                         | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard Value<br>Index (Inv /<br>Signal / Adm) | VIVAX<br>/<br>VVISX<br>/<br>VVIAX | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Wellesley Income<br>(Inv / Adm)     | VWIN<br>X /<br>VWIA<br>X          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Wellington (Inv /<br>Adm)           | VWEL<br>X /<br>VWEN<br>X          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Windsor (Inv /<br>Adm)              | VWND<br>X /<br>VWNE<br>X          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |
| Vanguard<br>Windsor II (Inv /<br>Adm)           | VWNF<br>X /<br>VWNA<br>X          | 0.10%                              | 0.10%                              | 0.10%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              | 0.00%                              |

- Using the average assets for each year (calculated by averaging the assets as of the end of year for the prior year and the end of year assets for the current year), I multiplied this by the Plans' expense credit as reported by both TIAA and Vanguard (see above) ("investment option administrative fee calculation").
- Each investment option's administrative fee calculation is summed with the others for a given year to estimate the total recordkeeping fee paid by the Plans for that year.

- Because TIAA received additional compensation through float (short term investment income earned on deposits to the Plans and interest earned on disbursements before transferred to the participant), I also included these amounts, adding them to the annual sum of the investment option administrative fee calculation. The amounts TIAA received for float are listed below. For the Faculty Plan these amounts were derived from PX0698, PX0694, PX0702, PX0707, PX0712, PX716, PX721, PX757. For the Medical Plan, these amounts were derived from PX0674, PX0678, PX0682, PX0686, PX0690, PX0749, PX0753, PX0761. For years prior to 2016, the earnings from float were paid to TIAA by J.P. Morgan (custodian of the Plans' assets) through banking fee credits in the amounts listed below. See PX0743.

| Description                             | 2009    | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    | 2016    |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| Faculty Plan Float Revenue to TIAA-CREF | \$1,290 | \$2,263 | \$6,004 | \$3,239 | \$3,181 | \$3,943 | \$3,629 | \$1,645 |

| Description                             | 2009 | 2010 | 2011 | 2012  | 2013    | 2014    | 2015    | 2016    |
|---|------|------|------|-------|---------|---------|---------|---------|
| Medical Plan Float Revenue to TIAA-CREF | \$19 | \$9  | \$44 | \$426 | \$4,122 | \$4,977 | \$4,913 | \$4,002 |

- Determine if there were any rebates credited back to participants that was paid from the administrative fee revenue captured by TIAA and Vanguard (as calculated according to the steps above). The rebates listed below were subtracted from the annual total administrative fees paid by the Plans ("net annual administrative fees"). I derived the rebates for the Faculty Plan from PX0698, PX0694, PX0702, PX0707, PX0712, PX716, PX721, PX757. I derived the rebates for the Medical Plan from PX0674, PX0678, PX0682, PX0686, PX0690, PX0749, PX0753, PX0761.

| Description         | 2009 | 2010 | 2011 | 2012          | 2013        | 2014        | 2015        | 2016        |
|---------------------|------|------|------|---------------|-------------|-------------|-------------|-------------|
| School of Medicine  |      |      |      |               |             |             |             |             |
| Revenue             | \$0  | \$0  | \$0  | (\$533,944)   | (\$470,810) | (\$693,560) | (\$373,700) | \$0         |
| NYU Retirement Plan |      |      |      |               |             |             |             |             |
| Revenue             | \$0  | \$0  | \$0  | (\$1,349,375) | (\$859,270) | (\$928,377) | (\$717,665) | (\$156,697) |

- Divide the net annual administrative fees by the number of participants with an account balance at the end of the year in each Plan's Form 5500 (line g) filed with the Department of Labor. The participant numbers are contained in the Parties Stipulation regarding Plan data.
- These calculations as described above gave me the total paid by both Plans for recordkeeping services in both a total dollar amount and reflected on a per-participant amount (which is used for benchmarking purposes only).<sup>90</sup>
- Because data for the Plans for 2017 was not available, I assumed the same asset balances, expense ratios, administrative fees, and rebates that were applicable in 2016 for 2017. This is a conservative assumption as the assets in the Plans have grown each year for the Class period. See Stipulation Regarding Plan Data.
- Because the Class period covers only the last quarter of 2010, I divided the net annual administrative fees by 4.

219. Using the same number of participants as noted above, I calculated the total amount the Plans should have paid using my market competitive rate I identified earlier in my declaration.

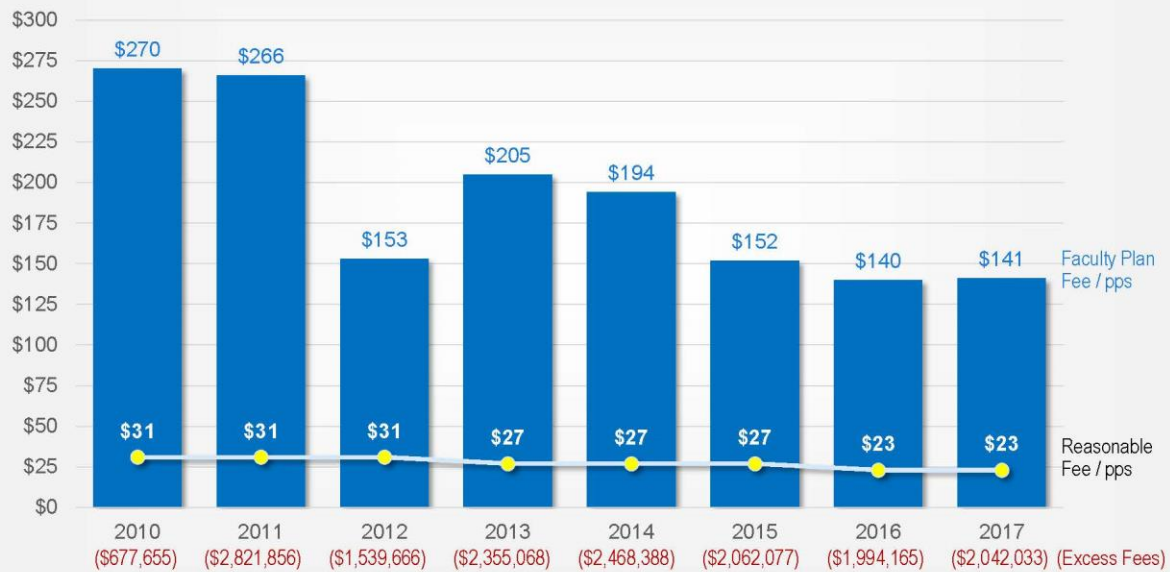
220. The excess amounts paid by the Plans was calculated by subtracting my market competitive rate from the amounts actually paid by the Plans.

221. The annual losses to the Faculty Plan are listed below:

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<sup>90</sup> Plan sponsors choose how to allocate plan expenses. I am not opining on a proper method for the allocation of these expenses. Rather, it is standard in the industry to express recordkeeping expenses on a per-participant basis in order to allow for proper comparisons and benchmarking.

### NYU FACULTY PLAN EXCESS FEES CHARGED VS REASONABLE FEES / PER PARTICIPANT



Source: Geist Decl.

222. The annual losses to the Medical Plan are listed below:

### NYU MEDICAL PLAN EXCESS FEES CHARGED VS REASONABLE FEES / PER PARTICIPANT



Source: Geist Decl.

223. To compensate the Plans for the lost investment opportunity for the excess amounts paid to TIAA and Vanguard, I compounded the excess payments annually for the Class period using the returns of an investible version of the S&P 500 Index (VIXX). The returns I used for this calculation are listed below and were derived from Morningstar.

| Ticker | 2009<br>Performance | 2010<br>Performance | 2011<br>Performance | 2012<br>Performance | 2013<br>Performance | 2014<br>Performance | 2015<br>Performance | 2016<br>Performance | 2017<br>Performance |
|--------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| VIXX   | 26.66%              | 15.07%              | 2.12%               | 16.00%              | 32.37%              | 13.68%              | 1.39%               | 11.95%              | 20.48%              |

224. My calculations, as I described them above, conclude that the Faculty Plan lost \$25,818,880 through unreasonable recordkeeping and administrative fees.

225. My calculations, as I described them above, conclude that the Medical Plan lost \$17,074,702 through unreasonable recordkeeping and administrative fees.

226. I also performed alternative calculations in the event the Court finds that the Defendant should have removed the CREF Stock Fund and/or the TIAA Real Estate Account, which both contribute a portion of their expense ratio for recordkeeping services. The CREF Stock Fund contributed \$18,442,302 in compounded recordkeeping damages for both Plans combined. If the Court finds both funds should have been removed for the entire Class period and awards a payment for the performance losses sustained by the Plans for this breach, the Plans' losses for excess recordkeeping payments would be reduced by subtracting these amounts, resulting in compounded losses of \$21,556,130. If the Court finds that only the CREF Stock Fund should have been removed then damages would be \$24,451,280. If the Court finds that the only the TIAA Real Estate Account should have been removed then damages would be \$39,3998,433..

**VIII. Defendant's Experts Lack Substantive Experience in the Defined Contribution Recordkeeping Industry**

**A. Marsha Wagner**

227. It is important to understand the difference between the process fiduciaries should follow and the quality of the actions performed by the Fiduciaries as they attempted to follow the process. Ms. Wagner may be experienced in the process fiduciaries should follow but she has no experience that would render her an expert on what a reasonable fee for recordkeeping services would be during the class period. See paragraphs 2-7. Based on her qualifications and experience set forth in her report, she has no experience negotiating recordkeeping fees with recordkeepers on behalf of plan sponsors. Nor does she have any experience managing a competitive sales and RFP process. She also does not have experience evaluating the financial aspects of a retirement plan from the perspective of a recordkeeper to understand the buying power and leverage of a plan sponsor. She does not have experience collecting bids from recordkeepers and evaluating their proposals to ensure that the proposals are actually comparable (apples-to-apples). Moreover, she does not have any direct experience with negotiating with recordkeepers to obtain lower bids throughout a competitive sales and RFP process.

228. Ms. Wagner never opines that the fees paid by the Plans were reasonable. Rather, she opines that NYU followed prudent *procedures*. Moreover, a careful reading of paragraph 2 of Ms. Wagner's report reveals that her only experience related to recordkeeping appears to be rightly focused on the process plan sponsors should use rather than the quality of the work performed pursuant to the process.

229. For example, Ms. Wagner describes "guiding committees on the due diligence process for issuing requests for proposals and the information to be considered . . ." and advising committees on the criteria for evaluating . . . fees of service providers" and "attending meetings .

. . to advise regarding issues arising in the performance of their duties. See paragraph 2. She does not, however, state that she was the one who actually received, read, evaluated, and analyzed RFP responses and communicated with recordkeepers to clarify proposals and bids in order to properly evaluate alternative proposals. In fact, that would be a surprise if that actually were the case. In her role as an advising attorney, Ms. Wagner may have sat in committee meetings, just like the committee meetings in this case, and, if she did, would have accepted the information presented to her in the meetings. Nothing in Ms. Wagner's report indicates that she actually analyzed the underlying facts related to the competing recordkeepers' qualifications, the quality of their services, and perhaps most importantly, the pricing proposed. She did not evaluate the proposals in a manner consistent with what recordkeeping experts would do. If the summary of the analysis and the information presented was not accurate, Ms. Wagner would not know and would not be in a position to advise the Committee that different actions or duties were warranted. Moreover, nothing in her report states that she has experience bidding on billion-dollar retirement plans nor experience in knowing what the market was for recordkeeping services nor experience negotiating directly with recordkeepers to understand the negotiating practices similarly situated fiduciaries would follow to obtain a reasonable fee, nor experience understanding how to determine the leverage and buying power a client with multiple plans and two separate billion-dollar plans would be able to exert. Additionally, nothing in Ms. Wagner's report indicates she looked into how the NYU plans benefited TIAA from its sales and marketing of proprietary products and wealth management services in determining whether that contributed to the excessive revenue earned by TIAA's relationship with the Plans.



**B. Adel Turki**

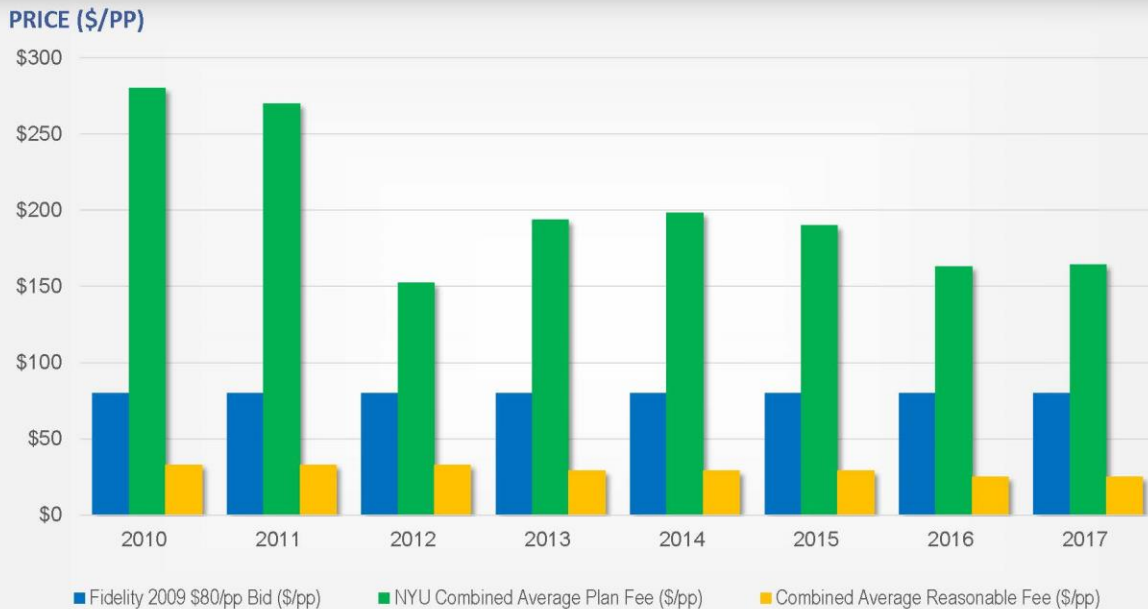
230. Regarding paragraph nine of Turki's rebuttal report, my opinions regarding the reasonable recordkeeping fee per-participant is based on my extensive experience pricing 401(k) and 403(b) plans. Further, many of the documents produced by TIAA, Vanguard, Cammack, and NYU cited herein support my opinions. For example, the Vanguard pricing models show that the variable cost per participant was around \$20. PX0910;PX1609.

231. The responses to the 2009 RFP also show what happens to the proposed prices during a sales and negotiation process, which also validates my opinion. In this case, during both the 2009 RFP and the 2016 RFP, TIAA proactively reduced its pricing by around 50% as soon as it thought NYU might do an RFP. In both cases TIAA reduced its proposed fee even further once an RFP was officially issued.

232. The most recent RFP validates that as a plan increases in assets and participants, the pricing declines. Specifically, TIAA agreed to lower its fee to 4.5 basis points once NYU selected TIAA as its sole recordkeeper. Then, TIAA agreed to reduce its recordkeeping fee even further to 3.4 basis points once all the assets had moved to TIAA's recordkeeping system. Recordkeepers are willing to provide their services for a lower fee rate to plans with more assets and more participants.

233. Further, the proposed fees of competing vendors that assumed far fewer participants and less assets were still dramatically lower than TIAA's fees at any point in time. As an example, Fidelity's original bid of \$80 per-participant was for less than half of the combined participants and assets for the Plans, yet it was multiples lower than TIAA's fees during the entire period.

# FIDELITY'S RECORDKEEPING BID IN 2009 WAS MULTIPLES LOWER THAN TIAA'S FEE



Source: Geist Decl.

234. If Fidelity and other competitors were given the opportunity to bid on all the Plans' assets, their bids would have been even lower.

235. Turki's statement that the recordkeeping fees for TIAA options offered in the plan represented only 40% of the total recordkeeping and administrative fees is not accurate and only demonstrates that Turki does not understand how the retirement industry works. The document he relies on separates recordkeeping services from related administrative services. It is a marketing document by TIAA. The services listed in both categories are part of the standard set of services offered by recordkeepers in the industry and included in my competitive market rate I describe above.

236. My analysis fully accounts for all of the disclosed revenue that TIAA attributed to the provision of record keeping and administrative services. My opinion regarding the reasonable fee for providing those services is based on the market rate for those services. Any

underlying inefficiencies or additional costs that TIAA failed to disclose are not considered by the market when competing record keepers are proposing services for new business. Each record keeper proposes a fee for the standard bundle of services required by defined contribution plans, which is the same as the services TIAA provided to NYU.

237. Paragraph 17 of Turki's rebuttal report is incorrect. I never suggest that recordkeepers would be willing to accept negative recordkeeping fees in order to preserve revenue from proprietary assets under management as a general rule. Rather, I perform a financial analysis to demonstrate how recordkeepers often look at the totality of the relationship when pricing, taking into consideration recordkeeping revenue and investment management revenue. The breakeven record keeping fee analysis demonstrates the leverage that large plans have when negotiating with recordkeepers. I performed this exact type of financial analysis thousands of times during my career at T. Rowe Price. Neither Turki nor Marcia Wagner has ever performed this type of analysis with respect to a recordkeeping and investment management client relationship

238. The financial analysis that I performed is not based on speculation. It is based on my extensive experience in the industry which includes understanding the reasonable range of variable cost that might be incurred by recordkeepers in the industry through countless projects connected with both of T. Rowe Price's recordkeeping platforms (one of which is the same platform, OMNIPLUS, that is used by TIAA) as well as several projects with industry consultants who had performed similar work for several other recordkeepers as well as information from many T. Rowe Price employees who came to T. Rowe Price from other recordkeepers, including Fidelity and Vanguard among others. Additionally, it is supported by the Vanguard pricing proposals that were produced in the discovery in this case which

demonstrate that Vanguard's marginal cost per participant was around \$20 per participant which is in the reasonable range I provide in all aspects of my economic and financial analysis.

Moreover, using any variable and fixed cost assumptions that are within the reasonable range does not materially change the conclusions that can be drawn from the analysis.

239. For example, even if TIAA had total allocated costs per participant of \$328 per participant around 2010 and even if its marginal costs per participant were 50% of the total allocated costs, meaning marginal costs of \$164 per participant (which everyone in the industry knows is not accurate), the break-even analysis would still support a recordkeeping fee of \$31 which is what the market would have produced had TIAA gone through an effective competitive RFP process.

240. It is doubtful that TIAA would admit publicly that it is inefficient and has not invested in its internal business processes or its underlying recordkeeping infrastructure such that its marginal cost per participant is above \$150. That would be bad for its business. And even if that is the case, however, it would demonstrate that TIAA was willing to price close to its own marginal cost when it reduced its fees in 2012. TIAA and Turki cannot have it both ways. Either its internal costs were high and out of line with the market and TIAA was still willing to price close to its marginal costs or its costs were more in line with the rest of the industry in which case its recordkeeping fees were extraordinarily high compared to its costs and TIAA would have been willing to reduce its recordkeeping fees to maintain all the profitable revenue associated with the relationship.

241. The market does not allow inefficient recordkeepers to charge for their own inefficiencies when other competitors have efficient processes. As is demonstrated by the Vanguard pricing model, a marginal cost that is in the range from around \$50 to below \$20 is

much more likely for TIAA during the class period. Any analysis using a marginal cost within the reasonable range demonstrates the leverage that the Plans could have used in their negotiations.

242. Finally, Turki asserts that the fees for the Medical Plan declined during the Class period. This is not true. As shown below, the per-participant recordkeeping fees for the Medical Plan increased during the Class period. Turki did not perform any calculations for the Faculty Plan or for either Plan during 2010 or 2011.

#### TURKI'S CALCULATION OF RECORDKEEPING FEES PAID BY THE MEDICAL SCHOOL INCREASED AFTER 2012

FEES \$/PP



Respectfully submitted,

Michael J. Geist